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Combined Meetings of Sections.

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THE SECTION OF OBSTETRICS AND GYNÆCOLOGY AND THE SECTION OF ANÆSTHESIA.

Anæsthesia for Cæsarean Section.

A MEETING of the Section of Obstetrics and Gynæcology and the Section of Anæsthesia was held to discuss anæsthesia in Cæsarean section.

DR. A. M. HILL (Melbourne) discussed anæsthesia in Cæsarean section from the point of view of the five methods of anæsthesia most in use or under discussion at the present time: ether anæsthesia, cyclopropane anæsthesia, local anæsthesia, spinal anæsthesia and caudal anæsthesia. He said that ether was still probably the agent most often used for Cæsarean section. It was easily administered and had a wide safety margin for the mother; but it was apt to cause severe operative and placental site hæmorrhage and and depression of the fœtal respiratory centre. Five rules, applicable to all types of inhalation anæsthesia in obstetrics, should be observed in ether administration: (i) The patient's stomach should be absolutely empty. (ii) Atropine should be given, if possible at least one hour before operation. (iii) Anæsthesia should not be started until the surgeon was ready to begin the operation. (iv) Anæsthesia should be light throughout. (v) The baby should be delivered within ten minutes of the commencement of induction of anæsthesia; unnecessary delay was to be condemned. Referring to cyclopropane, Dr. Hill said that in spite of the generally favourable opinion in which it was held, he had not been fortunate in the limited use he had made of it. Its advantages were held to be safety for the mother and (with at least a 70% concentration of oxygen in the bag) for the baby. However, laryngeal spasm followed by serious pulmonary atelectasis could occur in the baby, in spite of all precautions, and in one case fatal pulmonary collapse in the baby had been reported in elective Cæsarean section. As with ether, it was essential to obey the rules, especially speed in delivery and the maintenance of a high oxygen concentration in the bag. A maternal danger was the occurrence of a syncopal attack during cyclopropane anæsthesia if pituitrin was injected. Dr. Hill went on to say that his experience agreed with that of many others that local analgesia with the intravenous injection of "Pentothal Sodium" was the most satisfactory combination of methods for Cæsarean section, being safest for both mother and baby. Cyclopropane or trilene could be substituted for "Pentothal

Sodium" if difficulty was experienced in intravenous technique. Dr. Hill referred to the extra time and technique involved in local analgesia and to the occasional unpleasantness for the mother prior to delivery. He said that that opened up the vexed question of safe and effective pre-operative sedation. He believed that all opiates and barbiturates introduced unjustifiable risks for the fœtus, and therefore gave only one one-hundredth of a grain of hyoscine one hour at least before operation. Dr. Hill mentioned the pre-operative medication employed by other observers and asked for comments from those present on their experience. With regard to spinal analgesia, Dr. Hill said that it was rarely used in Melbourne because of the possibility of occasional deaths from the method of anæsthesia itself. Opinion overseas was increasingly in favour of the method. In Melbourne its use was restricted to cases in which such complications as gastric dilatation, ileus and intestinal obstruction were present; it had been most satisfactory. Abdominal relaxation was excellent in spinal anæsthesia and hæmorrhage was minimal. With the acumulating evidence of its greater safety it was likely to play a greater part in operative obstetrics. Referring to caudal analgesia, Dr. Hill said that it was rarely used in Australia; it was essentially an institutional procedure and could be attended by technical difficulties and medical risks. It had a place in the surgery of grave toxæmia of pregnancy, and if properly employed might give dramatic clinical results. It had no effect on the baby, and blood loss in the third stage of labour was minimal. Dr. Hill finally stressed the importance of improved anæsthetic agents and methods in reducing the maternal and fœtal mortality rates from Cæsarean section, and the value of the specialist anæsthetist in operative obstetrics.

DR. R. A. LEWIS (Hobart) said that the problem of anæsthesia in Cæsarean section demanded absolute cooperation between surgeon and anæsthetist. Cyclopropane had many advocates, and when administered by a competent anæsthetist undoubtedly had much in its favour. Spinal analgesia had fallen into disfavour. Recently the soluble barbiturates had come into vogue. Dr. Lewis presented a detailed analysis of 150 cases—89 Cæsarean sections performed at the Royal Hobart Hospital since 1943, in 12 of which he had administered the anæsthetic, and his own private series of 61 cases in 1948 and 1949. The cases were divided into five groups. In Group I "open" ether was used, occasionally with chloroform induction, in 81 cases; 60 of the patients were in labour. In Group II cyclopropane was administered in 41 cases, 19 patients being in labour. Dr. Lewis considered that cyclopropane had given the best results in his series. In Group III thiopentone, mostly with cyclopropane supplement after delivery of the baby, was used in 21 cases, seven patients being in labour. This method was at present being investigated; in all cases the cord had been clamped in under eight minutes after delivery of the baby and no adverse effect from the thiopentone had been observed; the mother had a pleasant induction and regained consciousness shortly after being returned to her ward. In Group IV local anæsthesia with thiopentone supplement was used. The method undoubtedly gave excellent results, but it was most distressing to a nervous patient, and for that reason it had been used in only seven cases. Dr. Lewis then discussed the effects of the various anæsthetic agents on both mother and child. He said that ether appeared to exert the greatest toxic effect, which was maximal on the baby. In the whole series there were 10 stillbirths; but in none of the 10 cases was a fœtal heart audible immediately before operation. The anæsthetics used were ether in eight cases, cyclopropane in one case and local anæsthesia in the other. Of the 10 neonatal deaths, nine occurred subsequent to ether anæsthesia; four were due to prematurity and one to cerebral injury, but the remaining four babies were full-term babies who were depressed at birth and did not recover. In the tenth case cyclopropane anæsthesia was used; the baby was active at birth, but subsequently became unconscious and died from what appeared to be a cerebral condition; an autopsy disclosed no abnormality in the heart and lungs. Dr. Lewis, in conclusion, emphasized that whatever agent was used, the condition of the patient was most important. If the operation was elective and the patient in good condition, the choice of anæsthetic mattered little; thiopentone given intravenously was the most pleasant for the patient. When labour had commenced, and especially if it had been prolonged or complicated by toxæmia or loss of blood from *placenta prævia* or accidental hæmorrhage, or if in addition heavy sedation with barbiturates, hyoscine or morphine had been employed, then the baby at birth would be depressed and every effort should be made to administer an anæsthetic which would not impose on it any further anoxæmia. Dr. Lewis believed that in such cases cyclopropane was the ideal choice if a competent anæsthetist was available; otherwise "open" ether with oxygen supplement under the mask was wiser than the more specialized procedures. Finally, great care was necessary in the resuscitation of the new-born baby. More physiological principles of resuscitation should be taught to those tending new-born babies, and it was the duty of medical men to see that nurses received such instruction as part of their obstetric training.

THE SECTION OF PUBLIC HEALTH, TUBERCULOSIS, TROPICAL MEDICINE AND INDUSTRIAL MEDICINE AND THE SECTION OF PATHOLOGY, BACTERIOLOGY, BIOCHEMISTRY AND EXPERIMENTAL MEDICINE.

MEETINGS of the Section of Public Health, Tuberculosis, Tropical Medicine and Industrial Medicine and the Section of Pathology, Bacteriology, Biochemistry and Experimental Medicine were held to discuss (*a*) fevers of the tropical coastline and (*b*) human function in the tropics.

Fevers of the Tropical Coast Line.

A Survey of Human Brucellosis in Queensland.

DR. E. H. DERRICK and MR. H. E. BROWN (Brisbane) presented a survey of human brucellosis in Queensland, in which they reported the occurrence of 25 cases of brucellosis over a period of fourteen years. Diagnosis was made by the agglutination test and confirmed in one case by the isolation of a strain of brucella, probably *Brucella suis*. Of the patients, 23 were male and two female. Thirteen of the patients were associated occupationally with cattle or pigs or both; they included meat workers, meat inspectors, dairy farmers and one veterinary officer. It was pointed out that such an association offered a much higher risk of brucellar infection in Queensland than the ingestion of milk. The authors stated that the general opinion that *Brucella melitensis* was not present in Australia was supported by the absence of evidence of brucellosis among goatherds or drinkers of goat's milk in Queensland. They urged maintenance of the Quarantine Department's strict surveillance of the importation of goats and sheep, to prevent entry of that organism. They stated that *Brucella suis* was the probable infecting agent in at least three of the cases recorded by them. The role of *Brucella suis* in human brucellosis in Queensland needed further investigation, as that species was common in Queensland pigs and was credited with greater invasiveness for man than *Brucella abortus*. To clarify the epidemiology, it was desirable to continue attempts to isolate and identify the species of brucella responsible for human infections. Such attempts should take into account the optimum conditions for its isolation. The authors then referred to clinical manifestations. They stated that the main symptoms of brucellosis were pyrexia, sweating and shivering, malaise, headache, loss of weight, generalized pains, and anorexia. The illness might be short, or prolonged for many months. Infection might be latent. Further study and effort were required to improve the standards of diagnosis, which presented difficulties to both clinician and pathologist. A practical step towards that end would be the making available to practitioners of a rubber-capped bottle containing a suitable medium, which

could be inoculated at the bedside. Two patients in the series had been treated with "Chloromycetin", with good immediate results.

Veterinary Aspects of the Prevention of Brucellosis.

MR. A. K. SUTHERLAND (Yeerongpilly, Queensland) read a paper entitled "Some Veterinary Aspects of the Prevention of Brucellosis". He said that human brucellosis was not transmitted from man to man and that brucellosis of goats was not known in Australia; therefore cattle and swine were the reservoirs from which human infections were derived. Local data on the species of brucella causing human infections were needed as a guide to the probable sources of infection. Brucellosis was prevalent among dairy cows throughout Australia. Pasteurization destroyed brucella organisms in milk, but even raw milk seemed to cause surprisingly few *Brucella abortus* infections. However, when *Brucella suis* occurred in a raw milk supply, human infections could be expected. Mr. Sutherland went on to say that brucellosis was so prevalent among dairy cattle that the expenditure of much money and manpower would be needed for its eradication. It was hoped that the extensive use of Strain 19 vaccine would reduce the incidence of the disease to the level at which eradication by the "test and slaughter" method was feasible. Mr. Sutherland then said that swine were a more important source of human brucellosis than were cattle. Swine brucellosis occurred in New South Wales and Queensland, but not in the other Australian States. Infected swine excreted *Brucella suis* more or less constantly in the urine. Further, the organism was found in lymph nodes throughout the body, so that the handling of infected pork might cause human infection. Because its distribution was limited and because of its public health importance, eradication of swine brucellosis was being attempted in Queensland. The agglutination test was used to identify groups of infected swine, and attention was concentrated on the raising of the young replacement stock free of disease by testing and sanitation.

Laboratory Diagnosis in the Typhus Group of Fevers.

DR. J. L. O'CONNOR (Melbourne) discussed the laboratory diagnosis of the typhus group of fevers. He said that a prominent feature of the group was the development of antibodies to one or another of the *X* strains of proteus organisms. Until the fairly recent development of satisfactory complement-fixing antigens, the Weil-Felix test had been the clinical pathologist's standby. Two recently developed methods depended upon the estimation of circulating typhus antigen in the blood, and two other methods depended upon showing that antigen was excreted in the urine. Both types of test permitted the laboratory diagnosis to be made on the first day of the disease, but they had certain limitations. Work by Keogh and his colleagues at the Commonwealth Serum Laboratories had shown that various bacterial polysaccharides formed a stable coating on the surface of red cells and rendered them agglutinable by immune serum. It had also been shown that this agglutination could be inhibited if the immune serum was first mixed with a liquid containing the same antigen as that coating the red cells. At the laboratories extracts of the polysaccharides from Proteus *X*19, *X*2 and *XK* had been found capable after treatment of coating red cells. An attempt had then been made to use Keogh's method in the early diagnosis of typhus, by the detection of antigen in serum and urine from typhus patients. The clinical material comprised about 20 cases of scrub typhus, two cases of epidemic typhus, three of murine typhus and four of Rocky Mountain spotted fever. In scrub typhus inhibition was produced when the cells were coated with Proteus *XK* polysaccharide. In the other three diseases it was found necessary to use Proteus *X*19 antigen as the coating substance, and it was also found that in the case of spotted fever Proteus *X*2 polysaccharide was ineffective. The mode of detection of typhus antigen in urine depended on the inhibition produced by it in an agglutination system consisting of polysaccharide-coated red cells and immune serum. The amount of inhibition produced depended on the degree of sensitization of the red cells used and of the concentration of antigen present in the urine. So far as observations had gone, the method appeared to give a simple and specific laboratory test for the diagnosis of diseases in the typhus group, though it had to be emphasized that investigation of some hundreds of cases was necessary before a final assessment of its value could be made. Dr. O'Connor gave complete details of the technique of Keogh's method as applied to serum and urine, and gave some account of other investigations that had been attempted. He pointed out that a specific laboratory diagnosis could be made in the earliest days of the disease; that was important, in view of the availability of such effective therapeutic agents as "Chloromycetin" and aureomycin. All the patients in the series had been treated early in the disease with "Chloromycetin" and had recovered rapidly.

The Australian Leptospiroses.

DR. D. W. JOHNSON (Brisbane) read a paper on the Australian leptospiroses. He said that leptospirosis had been first diagnosed in Australia in 1934 and since then 188 cases had been reported. The further 168 cases included in his paper brought the total to 356 cases. All except 15 of the patients lived in Queensland. The five serological types of leptospira known to cause human leptospirosis in Australia were *Leptospira icterohæmorrhagiæ* (classical Weil's disease), *Leptospira australis* A and B (canefields leptospiroses), and *Leptospira pomona* and *Leptospira mitis* (mild leptospiroses). The chief animal reservoirs in Australia were dogs and imported rats (Weil's disease), a native rat (canefields leptospiroses), pigs, cattle, calves and perhaps dogs (mild leptospiroses). Man was infected either by direct handling of infected animals or indirectly by contact with food and water contaminated with infected urine. Areas in which leptospirosis was endemic were the coastal region of North Queensland, devoted largely to the growing of sugar cane, and an area in south-eastern Queensland and north-eastern New South Wales, where the principal rural industries were dairying, pig raising and mixed farming. A further endemic area had been reported from Perth, Western Australia, and it appeared that the mild leptospiroses might be found to be distributed over a wider area than was known at present. Leptospirosis was to a large extent an occupational disease. The majority of the patients were people engaged in dairy farming, pig farming and sugar cane farming, butchers and other employees in meatworks, sewer workers, and workers in cafés, hotels and fish markets. In 15 cases of Weil's disease prominent initial symptoms were fever, malaise, prostration, vomiting, muscle pains and headache; 13 patients had jaundice, and two patients died. Infections caused by *Leptospira australis* A or B were clinically similar. Prominent symptoms were fever, prostration, vomiting, photophobia and meningeal symptoms. Of 35 patients, nine had jaundice. Of 59 patients, two died. Of 118 patients who contracted the mild leptospiroses, only one became jaundiced and none died. Prominent signs and symptoms were fever, muscle pains, prostration, meningeal involvement, renal involvement and eye involvement. Less common were pulmonary congestion, rash and transient arthritis. Dr. Johnson said that subclinical pomona-type infections occurred in exposed workers, and by producing immunity might be important in preventing outbreaks in endemic areas. He then briefly discussed the differential diagnosis and treatment. He said that preventive measures depended on the carrier animal. Rat destruction and the prevention of contamination of food, water and work places by infected urine were important in preventing Weil's disease and the leptospiroses of the canefields. Control of the mild leptospiroses, of which the chief carrier animals were cattle and pigs, was more difficult. At present the only worthwhile measures appeared to be to advise all exposed rural workers to wear boots, and all exposed workers to treat and cover promptly any breaks in the skin.

"Q" Fever in South Australia.

DR. J. M. DWYER (Adelaide) said that "Q" fever had been discovered in South Australia in January, 1948. The disease had occurred naturally, with one exception, among

workers at the metropolitan abattoirs of the City of Adelaide. The disease had occurred at irregular intervals, probably as the result of the slaughter of cattle from the Northern Territory or from western Queensland. Three laboratory workers contracted the disease whilst the rickettsiæ were being cultivated. Efforts to trace an insect vector had been unsuccessful. In Adelaide the disease clinically often resembled endemic typhus in the older sufferers, though the early presenting symptoms might suggest a variety of diagnoses. Aureomycin appeared the best antibiotic, and the only reasonably successful therapeutic agent in the disease. A vaccine was being tested and had been shown to be capable of producing complement-fixing antibodies. It might be useful for those who were immediately susceptible.

Discussion.

DR. J. BRODY (Gordonvale, Queensland), in discussing Dr. O'Connor's paper, expressed his interest in the possibility of a test for the early diagnosis of the typhus group of fevers. Early diagnosis was particularly important, as there was now specific treatment with such drugs as "Chloromycetin" and aureomycin. In the typical case of scrub typhus with an eschar, the diagnosis was easy. Dr. Brody stressed the clinical symptoms of change of personality in scrub typhus patients. However, when there were several patients with infectious fevers who presented similar symptoms, the differential diagnosis was often difficult. For instance, Dr. Brody mentioned three patients, one a butcher and two cane-cutters, who all had as their only symptoms fever, headache and vomiting. The butcher was suffering from leptospirosis (*Leptospira pomona*), one cane-cutter from scrub typhus, and the other cane-cutter from leptospirosis (*Leptospira australis* B). Dr. Brody thought that the differential diagnosis of leptospirosis, both in severe and in mild forms, was often extremely difficult.

DR. J. L. FREW (Melbourne) said that he was discussing the papers on behalf of Dr. Douglas Thomas and himself. He referred to a review of the cases of brucellosis in the Royal Melbourne Hospital in the years from 1941 to 1949. There were thirty cases in all, and of the cases four had occurred in 1947, nine in 1948 and twelve in 1949. It would seem from those figures that there was a probable increase in the incidence of brucellosis in Melbourne, although with present-day keener clinical evaluation and increased admissions to hospital, the increase might be only apparent. In their opinion, however, the increase was actual. A study of the epidemiology of the disease from those thirty cases revealed no distinctive features. All but five patients lived in the metropolitan area in scattered districts. Two patients had had contact with infected animals. The average age was thirty-nine years, the youngest patient being aged twenty years and the eldest sixty-two years. The frequency of the main symptoms and signs corresponded with those mentioned in Dr. Derrick's paper. One patient was jaundiced, eight patients had a palpable spleen, and six patients had a palpable liver. The diagnosis of brucellosis was considered established when the routine agglutination test against *Brucella abortus* produced a positive result in a dilution of 1 in 160 or more. Special significance was attached to a rise in titre. In that series only three blood cultures produced a growth of *Brucella abortus*. Dr. French, of the Walter and Eliza Hall Institute of Medical Research, had obtained five positive blood cultures in the past two years, all of which were of *Brucella abortus* as far as he could determine. In eight cases liver biopsy was performed; in one the liver was of normal structure. In the remaining seven lesions were seen which were considered typical of brucellosis — small granulomata consisting of central epithelial cells and peripheral small round cells with some polymorphonuclear leucocytes, appearing mainly in the portal connective tissue and extending to involve the liver parenchyma. The appearance suggested the diagnosis in one case with an onset suggestive of infective hepatitis, confirmation being obtained from positive results to agglutination tests and blood culture. The granulomata strongly resembled lesions in the liver of guinea-pigs experimentally inoculated with brucella. Dr. Frew demonstrated two sections from the liver. He said that in the series of cases the differential leucocyte count showed no particular pattern. The diagnosis of brucellosis was difficult and in some cases unsatisfactory. A more widespread appreciation of the clinical features and improved laboratory methods would help to overcome the difficulties in diagnosis. There was still no specific treatment for the disease. In the series under discussion seven out of the 11 patients treated with streptomycin and sulphadiazine showed a good response. Aureomycin was not used in the series, but in two other cases it gave a good result. In a follow-up of 29 of the patients only one showed a relapse, and it was assumed that in Melbourne relapse in brucellosis was infrequent. Human brucellosis could be prevented, and with improved methods of treatment the mortality should disappear. The disease must be eradicated from cattle.

DR. I. M. MACKERRAS (Brisbane) said that the series of papers demonstrated well the great variety of febrile conditions in North Queensland. Because of the difficulty in clinical diagnosis there must be increased laboratory aid in the identification of the organism and the early diagnosis of the disease by laboratory methods. At present the laboratory side was still inadequate, but Dr. O'Connor had shown improved methods for diagnosing rickettsial diseases. Dr. Mackerras asked Dr. O'Connor whether rickettsial polysaccharide could be used instead of the polysaccharide from the proteus group. He also wondered whether the hæmagglutination test devised by Keogh could be applied to the diagnosis of rickettsial diseases. He outlined the proposed plans for research work to be carried out in the Queensland Institute of Medical Research in relation to the diagnosis of rickettsial and virus diseases. A diagnostic test for dengue fever was necessary so that that disease could be differentiated easily. Dr. Mackerras said he hoped that as a result of Dr. Derrick's visit abroad and the work to be done at the institute, improved diagnostic methods would soon be available in that field.

DR. D. GORDON (Brisbane) said that from the point of view of the industrial hygienist the fevers under discussion were important, as they might be described as occupational diseases. There were a number of pyrexias of unknown origin which did not fit into any diagnosis. He stressed the increase in those fevers in the wet season in Queensland, and pointed out that there had been three deaths from Weil's disease and one death from scrub typhus treated with "Chloromycetin". He urged that adequate methods of prevention should be adopted, such as the use of dibutylthalate in the civil population and the eradication of rats. It was doubtful whether poisoning actually reduced the rat population, but it at least frightened the rats away from the canefields. Burning of cane before cutting was important. In regard to the diagnosis by laboratory methods, Dr. Gordon wondered whether patients were examined early enough for a high concentration of antigen to be detected by the tests. He was concerned about the difficulty of transporting specimens. He asked why there were not more cases of brucellosis and why there were not more epidemics of "Q" fever.

PROFESSOR A. H. BALDWIN (Sydney) referred to work which had been done in the past years in Queensland, and said that, as far as he knew, *Brucella melitensis* was not present in Queensland. He asked Mr. Sutherland whether any work was being done on that disease in wild pigs, and what effect the Strain 19 vaccine had on human beings.

DR. J. L. O'CONNOR (Melbourne), commenting on Dr. Dwyer's paper on "Q" fever, said that in all its clinical manifestations "Q" fever was not a well-defined clinical entity. Twenty-one of 23 laboratory workers had become infected. Of these, three had a subclinical infection and developed antibodies quickly, two had an "ambulatory" form of the disease with vagus symptoms and fever lasting from one to two days, and four had a severe infection, recovery being delayed up to three months. He stressed

the importance of remembering the diagnosis of "Q" fever in any pyrexia of unknown origin, and he thought that possibly many cases of "Q" fever were at present diagnosed as cases of primary atypical pneumonia. In "Q" fever cold agglutinins were rarely found. It was important to isolate the organism by using the guinea-pig. Of the 21 cases that had occurred among laboratory workers, the organism was isolated in 17. Dr. O'Connor referred to one case which had occurred in New South Wales in a woolbroker, whose only contact had been with sheep. He pointed out that little was known of the distribution of "Q" fever in Australia.

MISS P. M. ROUNTREE (Sydney) asked Dr. Frew if he could give the sex incidence of brucellosis in Melbourne.

DR. K. C. PORTER (Rockhampton) referred to leptospirosis in Cairns, and asked Dr. Johnson whether he thought that chronic pyelitis could be a sequel to leptospirosis. He mentioned patients in Cairns who had been treated with "Novarsenobillon" and whose pyelitis had cleared up. Leptospira had been found in the urine.

DR. B. C. COHEN (Perth) asked Mr. Sutherland whether brucella affected the genital organs of bulls and, if so, whether the bulls transmitted the disease.

DR. J. M. DWYER (Adelaide) referred to a paper given in 1946 by Dr. Caughey, of New Zealand, in which he described a series of cases of primary atypical pneumonia occurring in New Zealand troops in Sicily. Later the paper was published and the diagnosis was altered to "Q" fever.

DR. G. E. COLE (Melbourne) agreed with Dr. Frew's statement that brucellosis was increasing in Victoria, especially in the last four years. He wondered whether the increase might perhaps be only apparent, as the cases seemed to come from two areas where the practitioners were aware of the occurrence of the disease.

DR. MICHAEL WILSON (Melbourne) pointed out that in Victoria the practitioners were aware of the possibility of brucellosis and that an increasing amount of bacteriological investigation was being undertaken. He asked Mr. Sutherland whether it was possible in the eradication of the disease in cattle to combine both the method of destruction of the infected animals and the use of vaccine.

Dr. O'Connor, in reply to Dr. Mackerras, said that the yield of polysaccharide from proteus strains was much greater than the yield from rickettsia, and therefore it was better to use proteus strains. In reply to Dr. Gordon, Dr. O'Connor said that if the urine was sterile when collected, the question of transmission over long distances did not matter. Contaminated urine gave false positive reactions. If the urine was sterile on collection it could be preserved by the addition of a 0·5% formalin solution. The antigen in the urine was stable.

Dr. D. Johnson, in reply to Dr. Brody, agreed that the differential diagnosis of the various tropical fevers was difficult. Scrub typhus was the most frequently confused, especially if no eschar was present. In reply to Dr. Porter, Dr. Johnson said that he was not aware that chronic renal infection followed leptospirosis, but he would not be surprised if it did occur. Leptospira could be excreted in the urine up to eleven months after infection. He thought that penicillin was of more use than "Novarsenobillon". The best results had been obtained with streptomycin.

Dr. J. K. O'Reilly, in reply to Dr. Gordon, said that brucellosis was probably not more prevalent because of the low virulence and low invasiveness of the organism and of the probable lack of opportunity of infection.

Dr. Frew, in reply to Miss Rountree, said that in his series of 30 cases 26 of the patients were male.

Mr. Sutherland, in reply to Dr. Frew, said that in Victoria the incidence of brucellosis should be falling because vaccination had been used extensively in that State. In reply to Professor Baldwin, Mr. Sutherland said that he had no knowledge of the incidence of the organism in wild pigs, but he did not think that that would have any bearing on the control of the disease. Humans were susceptible to S-19 vaccine. He quoted a case in America in which infection had occurred through the conjunctival sac when the vaccine was splashed into the eye. Mr. Sutherland said that in his own laboratory several workers had pricked their fingers with infected needles and as a result had suffered from painful swollen local lesions. There had been no systemic infection. In reply to Dr. Cohen, Mr. Sutherland said that bulls could become infected, the lesions being usually orchitis and epididymitis followed by sterility. Infection could be transmitted from the bull, especially if it was used for artificial insemination. In reply to Dr. Wilson, Mr. Sutherland said that the combined methods of animal destruction and vaccination could be used. In general, the aim was to establish a disease-free immune herd rather than a disease-free susceptible herd.

Human Function in the Tropics.

PROFESSOR W. V. MACFARLANE (Brisbane) read a paper on human infection in the tropics. He referred first to work done during the last thirty years in the colonization of North Queensland. He said that despite the increased population, production and civilization of the hot country there were still inevitable reservations on human function. There were individual differences in the reactions to heat; but some people all the time and all people occasionally failed to reach their highest achievements because of the heat. Professor Macfarlane then described experiments carried out to determine comfort in hot environments for Sydney subjects, clothed and at rest. Outdoor workers tolerated more heat than indoor workers. Professor Macfarlane drew attention to the effective temperature produced by the American Society of Heating and Ventilating Engineers. It had been found that the effective temperature was not so useful a comfort index as dry-bulb temperatures, because it gave undue weight to humidity and had a subjective background. In hot environments, performance in athletics, in factory production, and in psychomotor skill in arithmetic, coding and pursuit of moving objects was reduced (dry-bulb temperature over 85° F.). Acclimatization was associated with a reduction of thyreoid activity and with the possible production of thermothyrin. Lower conception rates occurred in the hot season than in the cool season, north of 35° south latitude, whereas winter conception was reduced south of that latitude. Adrenal cortical hormones were produced in excess during acclimatization, and their failure might be important in tropical fatigue.

DR. C. E. COOK (Sydney) considered that the results of experimentation on the lines discussed by Professor Macfarlane did not give grounds for generalizations regarding the white man in the tropics. As one who had lived in tropical areas for most of his life, he regarded as nonsense the suggestion that cerebration and manual skill were affected in the tropics, and one of the fallacies of many acclimatization studies in Australia was the fact that they had been carried out on people who normally dwelt in temperate areas and who had been suddenly exposed to tropical conditions. The mechanism of acclimatization was a long and slow one, and a newcomer to tropical conditions did at first suffer, but in a few months he became adapted and was then manually and mentally as good as his southern brother. At first, sweating was profuse and drenching, and wetness of the hands resulted in the loss of some manual skill, but with adaptation less sweating occurred. He considered, too, that there were too many variables to be considered to enable valid conclusions to be drawn from sporting results; for example, football was played in Darwin in summer because only then was the ground soft enough and the acclimatized elected to play that strenuous game in hot wet weather. He urged that before generalizations were made on what he regarded as inadequate and incomplete information consideration be given to many intangible factors which might be overlooked because the fact remained that people living in the tropics were happy, skilful and, in general, comfortable.

DR. NOEL GUTTERIDGE (Brisbane) said that an interesting aspect of the problem was the question of tropical

nutrition, which had assumed great importance during the war in New Guinea, where in the early days of the campaign diets were inadequate and it became urgently necessary to alter the ecological situation in the interests of both troops and natives. That had been done by provision of refrigerated transport and storage of food, better training of catering personnel and improvement of hospital diets, eventually forward troops being provided with fresh meat, vegetables, bread, fruit and eggs. It had been found that caloric needs per day were much greater in the tropics than had been previously supposed, and they were finally calculated on the formula

$$C. \text{ per day} = 4660 - 15{\cdot}9T,$$

where T was the mean external temperature (Fahrenheit). Man had little inherent sense of his needs, as exemplified by the stoker with cramp, who rejected sodium chloride and demanded morphine for his pain, and food of wide range of variety, well served, and consumed under comfortable conditions, was necessary in the tropics. Japanese troops while stationed in Rabaul had provided a mass example of thiamin deficiency when their diet had been reduced to plain rice.

DR. T. J. K. JAMIESON (New Hebrides), from his own experience with conditions in New Guinea, supported Dr. Cook's views that with training there was no loss of efficiency in the tropics. He had found in Port Moresby that amenorrhœa and menstrual irregularity were common among white women, but while many couples were childless there were several families with five or six children. He was convinced that certain people, especially some women, would never settle in the tropics.

DR. E. SINGER (Brisbane) said that adaptation to tropical conditions was largely a psychological problem. In Europe children grew more rapidly in autumn and spring and more slowly in winter and summer.

DR. C. L. PARK (Hobart) said that during twelve years' residence in Singapore he had noted that new arrivals at the naval base maintained their efficiency for the first and second years of their employment, but after that time there was a falling off in their capacity for work.

DR. D. GORDON (Oxley, Queensland) said that two questions were of practical importance to Queensland: firstly, "Would North Queensland eventually be occupied by a semi-coloured population sitting in the sun?"—an important question from the standpoint of defence; and secondly, "Was the climate going to affect the capacity for production?"—a matter of importance in relation to the development of the northern coalfields. He thought that temperate dwellers wasted a lot of sympathy on those living in the tropics, and he was not impressed with hot-room experiments carried out in Europe and North America, nor was he prepared to accept Professor Macfarlane's conclusions *in toto*. Changes did occur in those living in tropical areas, but human adaptability was such that white men could live successfully and efficiently in the tropics.

PROFESSOR A. H. BALDWIN (Sydney) urged that research in tropical acclimatization be continued in Brisbane because the North American workers were now concerned mainly with problems of cold. He considered that acclimatization was not only physical, but mental, and that Dr. Cumpston's coining of the term "kitchen neurasthenia" was apt and could be appreciated when many North Queensland homes were examined. He supported the view that air-conditioning was of great value and urged more research in regard to tropical housing. In his opinion acclimatization consisted of two phases—a short term, one concerned with changes in vascular and sweating mechanisms, and a long term phase of glandular acclimatization, which might take generations. It had been found that the average age of commencement of menstruation in Queensland was the same as in the south, but there was a bigger deviation from the mean.

Professor Macfarlane, in reply, said the need to study all sections of the population was important, as babies in common with other young animals suffered in the heat. While admitting that the state of the track might affect athletic results, he considered that the temperaure curves he had demonstrated fitted in with the rate of running. He was interested to hear of the observations on amenorrhœa made in New Guinea, and hoped that further work would be done on that subject in Queensland. In his opinion acclimatization was primarily an adrenal function, followed by a long-term change, probably endocrine in nature, and the question of acclimatization was important in relation to relative function. It was not merely a question of whether people could live in the tropics, but a question of how many could live and how well and how skilfully. That was borne out by the probable fact that there was not much intellectual output from tropical countries. Professor Macfarlane was as humble as anyone else in his approach to the problem and did no more than offer suggestions, realizing the necessity for more field work to be carried out, but there was little doubt that there was a difference in the over-all activity of the white man in the tropics compared with the activity of dwellers in temperate zones.

Section of Medicine.[1]

President: J. P. Major, C.B.E., M.D., B.S., F.R.A.C.P., Victoria.

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Honorary Secretary: T. A. Parry, M.B., B.S., M.R.A.C.P., Queensland.

President's Address.

DR. J. P. MAJOR (Melbourne) referred to the advances in medicine which had been made in the course of an ordinary lifetime. He said that it was small wonder that the clinician was better equipped than he had been forty years before. Mankind had benefited enormously from progress in prevention of disease and in improved methods of diagnosis and treatment. Dr. Major referred briefly to some of the aids to diagnosis and to the new medicaments that were available to the practitioner. It was clear, he said, that physicians of the present day had many advantages over those who had been their teachers in the early part of the century. These men had been great because of their natural ability, the keenness of their study and the brightness of their intellect; they had made close observation of man in health and disease and had developed to the full and exercised their five senses. Dr. Major suggested that some present day clinicians tended to rely too much on mechanical aids and did not make full use of their senses. All were familiar with the type of newly qualified resident medical officer who took a patient's history and made a physical examination, and then proceeded to order or to undertake a series of special investigations. Many of these were quite unnecessary for the making of a correct diagnosis. Probably no harm was

[1] The meetings held by the Section of Medicine with the Section of Surgery, with the Section of Public Health, Tuberculosis, Tropical Medicine and Industrial Medicine and the Section of Radiology and Radiotherapy, and with the Section of Medical Literature and History, have been recorded.

done to the patient if he was submitted to a long series of special tests and investigations. Special procedures, however, did add considerably to the cost of medical care. If "the worship of the test tube" was left unchecked, the end result might be an impairment of the doctor's ability to use his powers of observation and this would be a calamity for the doctor. After making reference to the need for careful history taking, Dr. Major mentioned several methods of clinical investigation and tests, which, he thought, were sometimes used unnecessarily. He said that his belief might be too idealistic, but he thought that when physicians used many of these special investigations their aim should be to educate themselves so that eventually they might be able to do without them. Such an aim could be achieved only by close observation, full use of the senses and intellect and a wide and well-classified experience. Dr. Major concluded his address with reference to the attention that should be paid to the mental anxieties and worries of patients and to the development of sympathy and understanding which would create a lasting bond between doctor and patient.

The Problem of the Persistent Duodenal Ulcer.

DR. S. GOULSTON (Sydney) opened his paper on the problem of the persistent duodenal ulcer by saying that it might well be said that duodenal ulceration represented an incurable disease and that present treatments for it were unsatisfactory. The ulcer was generally found in the first part of the duodenum. It was invariably associated with a high free-acid curve, with rapid emptying of the stomach but delay in the removal of the last part of a meal, and with extensive gastric peristalsis. It was commoner in men than in women, and was commonest in the wage-earning period, when the subject should be in the full vigour of manhood. It caused great economic wastage. Duodenal ulceration varied in intensity. Sometimes activity occurred only once or twice in a lifetime. In other instances the ulcer was persistent and recurrences were so frequent that the subject spent long periods in bed with prolonged absences from work. Dr. Goulston gave the histories of four patients suffering from persistent severe duodenal ulceration. He pointed out that the problem was twofold. The first had to do with the healing of the ulcer; the second with the prevention of recurrence. Properly conducted treatment usually produced healing, so that prevention of recurrence was the real problem. The main causes of breakdown were dietary indiscretions, infections, physical fatigue, and particularly emotional conflicts and "pseudo-adequate" medical treatment. Dr. Goulston dealt with possible methods of treatment directed towards prevention of recurrences. The first was hyperalimentation; the second consisted in the use of enterogastrone, which was held by Ivy to inhibit gastric motility and secretion and to prevent the occurrence of ulcers in dogs; the third was surgery; and the fourth was a medical régime. Dr. Goulston gave details of a form of medical treatment and he said that the patient should be given a good understanding of the condition from which he was suffering and of the factors believed to play a part in its causation. He should understand that he was suffering from a lifelong complaint analogous to asthma or *diabetes mellitus*. Surgery should if possible be avoided. If a combined and prolonged effort by patient and physician failed then perhaps a simple bilateral vagotomy was the most rational line of therapy.

DR. HORACE JOHNSON (Brisbane) said that most of those present had reached the same conclusion, namely, that persistent duodenal ulcer was practically an incurable disease. No advance had been made in the treatment of the acute acerbations, the basis of which must be rest. The old dictum still held: if the patient was not relieved of symptoms within seventy-two hours, either some complication was present or the diagnosis was incorrect. With regard to recurrent ulcers, Dr. Johnson was of the opinion that emotional conflict was the most potent aetiological factor, and he stressed the necessity for a close *rapprochement* between patient and physician. Speaking of surgical treatment, Dr. Johnson said that bilateral vagotomy had not fulfilled expectations. He stressed the importance of a regular follow-up of ulcer patients at gradually increasing intervals.

SIR CHARLES BICKERTON BLACKBURN (Sydney) said that he was in general accord with Dr. Goulston's remarks. In his opinion the important point was when the patient ate rather than what he ate; tram drivers were notorious as ulcer sufferers because of their frequently changing shifts. He told his patients that he did not care what they ate, but only when they ate, and many patients had remained well without recurrence of symptoms for long periods by an insistence on the regularity of meals.

DR. J. YEATES (Sydney) said that the rapid emptying of the stomach was one of the problems of the treatment, and asked for Dr. Goulston's opinion as to the efficacy of continuous intragastric drip therapy.

DR. IAN WOOD (Melbourne) spoke firstly on the question of enterogastrone; he said that it should not be thought to be the answer to the ulcer problem. In fact, recently reported results had been most discouraging, and it should be further tried on a strictly experimental basis. Secondly, Dr. Wood said that he would not like to think that his patients with duodenal ulcer had an incurable disease. It was difficult to know when a patient was cured, and radiologically it was not possible to say with certainty that the ulcer had healed. In his opinion, most recurrences were due to a breakdown of an existing ulcer. Dr. Wood thought that better results could be expected from more radical surgery, and in cases of frequent relapse clinicians should not shrink from the decision to have an operation performed. He disagreed with Dr. Johnson in that he had found that not all patients lost their pain within seventy-two hours of the institution of adequate therapy; most of such patients had penetrating ulcers.

Dr. Goulston, in reply, said that he agreed with Dr. Wood as to the delay in the disappearance of pain in some cases, and he felt happy if all symptoms had disappeared by the end of the third week. Dr. Goulston agreed with Sir Charles Blackburn as to the paramount importance of the time of taking meals. He had found intragastric drip therapy useful for patients whose condition had not settled down by the end of the third week. Dr. Goulston said that when he described duodenal ulcer as an incurable disease, he meant that the tendency to break down was ever present. In most instances, it was the old ulcer which recrudesced. In conclusion, Dr. Goulston said that he regarded the operation of partial gastrectomy in young people as disastrous and a slur on the skill of physicians.

The Problem of the Thoracic Stomach.

DR. A. W. MORROW (Sydney) read a paper entitled "The Problem of the Thoracic Stomach"; he dealt with the condition associated with congenitally short œsophagus or with hiatus hernia. He adopted Akerlund's classification into three types: (i) congenitally short œsophagus producing a thoracic stomach; (ii) paraœsophageal hiatus herniation of the stomach; (iii) œsophago-gastric herniation through the œsophageal hiatus. Dr. Morrow stressed the congenital origin of the abnormality, but pointed out the important part played by precipitating factors, such as sudden trauma producing a rise in intraabdominal pressure, or by a more gradual increase in pressure such as occurred in pregnancy or obesity. He said that the symptomatology was bizarre, but might stem from three factors: (i) mechanical interference with the function of the herniated portion of the stomach; (ii) increased pressure in the posterior mediastinum; (iii) interference with the normal function of the diaphragm. A diagnostic complex was epigastric or low substernal pain radiating to the left hypochondriac area and the back, and aggravated by large meals, by a recumbent position or by exertion. That condition would remain unrecognized on most occasions except for complications such as (*a*) œsophagitis with ulceration and stricture, (*b*) gastritis or ulceration or both, (*c*) severe iron deficiency anæmia, (*d*) malignant degeneration, (*e*) perforation, (*f*) obstruction. Dr. Morrow went on to say that concurrent diseases such

as cholecystitis, cholelithiasis, peptic ulceration and cardiovascular disorders were frequent. Other congenital abnormalities of the gastro-intestinal tract such as duodenal and colonic diverticula were frequent. The diagnosis was made primarily by radiological examination, but œsophagoscopy and gastroscopy were additional aids. In the majority of cases treatment was conservative, and consisted in weight reduction and the adoption of a modified ulcer régime. The results of left phrenic paralysis were disappointing. More drastic surgery was rarely indicated.

DR. L. J. J. NYE (Brisbane) said that whereas the true thoracic stomach was a rare condition, a partial thoracic stomach due to a hiatus hernia was relatively common in elderly females, especially when they were obese. Anginal symptoms due to pressure in the posterior mediastinum might occur. Dr. Nye quoted the case of an obese male, aged fifty-seven years, who had suffered from flatulent dyspepsia for some years. Suddenly one morning he was seized with a tight feeling across the chest, the pain radiating down both arms; the attack persisted for about three minutes and recurred an hour later. Subsequently, the same morning, he had a more severe attack which produced unconsciousness. A diagnosis of coronary occlusion was made, but the electrocardiogram was normal in all leads. An X-ray picture of the chest revealed that the left side of the diaphragm was high and that the heart was displaced to the right. Eventration of the diaphragm was diagnosed, and a subsequent barium meal examination revealed the cardio-œsophageal junction to be as high as the level of the second costal cartilage. Dr. Nye's interpretation of the attack was that gas in the stomach had caused displacement of the heart, with the production of coronary spasm.

DR. J. COLCLOUGH (Sydney) said that as a radiologist he was rather diffident about speaking at a meeting of physicians; but he thought that the remarks of Dr. Kinsella published in THE MEDICAL JOURNAL OF AUSTRALIA were fully warranted. Dr. Colclough had found that in all cases of vague dyspepsia, the only way to avoid mistakes in diagnosis was to "tip the table up" so as to examine the fundus of the stomach and the adjacent diaphragm. That procedure would exclude not only carcinoma of the stomach, but also such conditions as that under discussion. Any tumour of the mediastinum called for an examination with barium, not only a barium bolus, but also an examination in the Trendelenburg position. Dr. Colclough said that he had seen a grossly dilated œsophagus due to cardiospasm simulate mediastinal lymphosarcoma.

Bronchial Adenoma.

DR. H. MAYNARD RENNIE (Sydney) read a paper on bronchial adenoma. He said that it was a somewhat rare condition, but correct diagnosis and adequate treatment led to satisfactory results. Dr. Rennie then presented three clinical records to illustrate the problem of diagnosis and treatment of the condition. He pointed out that an irritating, non-productive cough, hæmoptysis and recurrent pulmonary suppurative lesions, particularly in women under the age of forty years, might have bronchial adenoma as their basic cause. The recognition of the lesion was important, for correct treatment would follow correct diagnosis, which could usually be made only by bronchoscopy and biopsy. Dr. Rennie said that the tumour was generally regarded as locally malignant, and pulmonary resection was the correct treatment if it was not possible to remove a local endobronchial tumour by diathermy. If that conservative treatment was adopted, constant review was needed to ensure that the radical procedure was carried out if evidence of recurrence was forthcoming. Dr. Rennie stressed the need for full investigation of hæmoptyses and chronic pulmonary suppurating lesions, so that the full benefits of modern thoracic surgery might be made available to patients. The patient suffering from bronchial adenoma might be given, not only relief of his symptoms, but also cure of the condition.

DR. ELLIS MURPHY (Brisbane) said that the record of the Brisbane Hospital showed that there had been three cases of bronchial adenoma in the last two years, and he had had one case in private practice in that time. Of the Brisbane Hospital patients, the first was a female, aged thirty-nine years, who presented with recurrent hæmoptysis and purulent sputum. Collapse of the left lung was demonstrated radiologically, and a bronchoscopic examination demonstrated obstruction of the left main bronchus. Pneumonectomy was performed, but the patient died. A second patient was also a female, aged forty-five years, who complained of slowly increasing dyspnœa, especially while lying on her back. Bronchoscopic examination revealed a tumour in the trachea, a biopsy specimen of which was examined by Professor A. J. Canny, who reported that the structure was similar to that of a mixed salivary tumour. The adenoma was treated by diathermy with good results. The third patient was a male, aged forty-five years, who had recurrent hæmoptysis, and in whom obstruction of the right lower lobe bronchus was demonstrated. The biopsy findings were suggestive of an adenoma, and lobectomy was performed, with complete recovery of the patient. Dr. Murphy said that he believed that many adenomata became malignant and gave rise to metastases. The fourth patient was an obese woman, aged thirty-two years, who developed pneumonia in July, 1944, and was later found to have residual dulness at the base of the left lung. This was thought to be due to an empyema, but no pus was found. At that stage the patient was sent to Brisbane, and although some pus was aspirated from the pleural cavity, cough and recurrent hæmoptysis continued, and later an X-ray examination revealed collapse of the lower lobe of the left lung. She refused bronchoscopic examination at the time, and a little later complete collapse of the left lung occurred. Bronchoscopic examination then revealed a yellow mass in the left main bronchus, and though it was not possible to remove it, a subsequent bout of violent coughing resulted in its expectoration, after which her clinical condition rapidly improved. She was, however, left with residual bronchiectasis. Dr. Murphy said that, though uncommon, the condition was apt to be met in practice, and each case had to be considered on its merits with regard to the form of treatment to be adopted, as the question of malignant disease remained.

DR. COTTER HARVEY (Sydney) said that in some cases the clinical picture at the onset was spectacular, hæmoptysis being followed by atelectasis. He was sure that in the early days many such lesions were diagnosed as carcinoma and the patients were treated with radium or radon implants, with remarkable results which led to the report of cures of bronchogenic carcinoma by those means. The problem of treatment was a vexed one. He had heard a discussion on that subject during a recent tour of America. Goldman believed that bronchial adenomata were all of some degree of malignancy, but he was opposed by Neihoff, who said that whereas cylindromata could be malignant, adenomata were not so. In his opinion, the correct treatment was removal of the affected lobe.

DR. N. M. CUTHBERT (Perth) thought that in view of the early age at which most bronchial adenomata occurred, there might be a possibility of natural regression, as was the case with nasal fibro-adenomata.

Dr. Rennie, in reply, said that the question of malignant change was difficult, and the transformation of a true adenoma to a true carcinoma was doubtful. He failed to see how those tumours could be dealt with by resection of the affected portion of the bronchus, as such a procedure would inevitably lead to stenosis which in itself was an indication for the removal of a lobe or lung. Dr. Rennie stressed the importance of adequate preoperative preparation of the patients.

The Importance of Tuberculous Bronchitis in the Management of Pulmonary Tuberculosis.

DR. MAURICE JOSEPH (Sydney), in opening his paper on the importance of tuberculous bronchitis in the management of pulmonary tuberculosis, said that most investigators had found that 50% to 60% of patients dying from pulmonary tuberculosis had macroscopic or microscopic lesions in the trachea or major bronchi. Only in recent

years had tuberculous tracheo-bronchitis been recognized as an important complication of parenchymal disease affecting its prognosis and treatment. Endobronchial tuberculosis did not begin by surface implantation as was generally supposed; infection spread by means of the rich network of submucosal lymphatics—the earliest lesions were submucosal tubercles. Diagnosis depended on an awareness of the occurrence of the condition, and the presumptive signs were clinical and radiological. These Dr. Joseph described. Bronchoscopically three stages were recognizable. The first was one of submucosal infiltration; it looked like a non-specific inflammation. The second stage was one of ulceration and the third one of healing. After the last, fibrostenosis was likely to occur. The effect of the lesions at any stage was to narrow the bronchus. The harmful effect of narrowing was readily understood because the bronchial tree was a dynamic structure which elongated and dilated with inspiration and shortened and contracted with expiration. Thus were explained tension cavities and the failure of cavities to close despite apparently adequate collapse. The "backfiring" of secretions under these conditions explained the rapid spread distal to the stenotic lesion. Further complications of stenosis were secondary infection and bronchiectasis, empyema and contralateral spread, which had been attributed to an "atomizer" effect of the incomplete stenosis. Endobronchial tuberculosis also complicated management. Collapse therapy relaxed the bronchial tree and narrowed its lumina; the additional narrowing might result in obliteration. If this happened to a large bronchus, the effect might be disastrous. Treatment, never satisfactory, had been more effective with streptomycin. Dr. Joseph referred to one series in which treatment had been followed by stenosis; when this happened the only feasible treatment was resection of the affected lobe or lung. Dr. Joseph had examined during the previous twelve months 60 patients referred to him because of the possibility of the presence of endobronchial tuberculosis. They had included 46 males and 14 females. Of the males eleven showed evidence of endobronchial tuberculosis and of the females six. Dr. Joseph read the histories of five patients. In conclusion he said that many problems in connexion with the condition remained. They should in time be solved by the chest physician who worked with a bronchoscopist, or, better still, who performed the bronchoscopic examinations himself.

DR. HAROLD LOVE (Brisbane), in opening the discussion, said that more and more emphasis was being placed on endobronchial disease in the management of pulmonary tuberculosis. It explained many of the episodes occurring in the course of the disease, the cause of which had previously been obscure. It explained sudden rapid progression that might occur; it explained the appearance of tubercle bacilli in the sputum when the parenchymal disease appeared healed; and it made one cautious in accepting radiological evidence of a cure, especially in minimal lesions. It shed light on the pathological anatomy of the disease and explained the cause of atelectasis, tension cavities *et cetera*. Dr. Love went on to say that bronchoscopy was of great help in such cases and should be employed frequently; but even bronchoscopy might fail to reveal endobronchial disease when it was present. Dr. Love finally said that an antagonistic attitude must be adopted towards collapse therapy when endobronchial disease was found to be present.

DR. A. H. PENINGTON (Melbourne) said that the paper was very important, as the significance of bronchial disease should be stressed. He emphasized two points. The first point was that bronchial stenosis was seen more frequently now than formerly, and he doubted whether the use of streptomycin made any difference to its occurrence. He quoted an illustrative case from the Repatriation General Hospital, Heidelberg, in which, despite an excellent bronchial response to streptomycin, stenosis of the right main bronchus occurred and right pneumonectomy had to be performed. The patient was left with stricture of the trachea which would permit the passage of an infant-sized bronchoscope only. Dr. Penington said that he had tried the use of "P.A.S." as an aerosol spray in endobronchial tuberculosis, but he could not as yet evaluate its effect. The second point he wished to make was that bronchoscopic findings in patients with artificial pneumothorax might be misleading, in that the lower lobe bronchus might appear to be stenosed when in fact it was not.

DR. J. HUGHES (Melbourne) asked two questions: (i) In tracheo-bronchial tuberculosis, was the development of stenosis influenced by the use of streptomycin? (ii) Was the occurrence of collapse of a lobe in the course of pulmonary tuberculosis treated by artificial pneumothorax of any importance?

DR. H. M. RENNIE (Sydney) said that the calibre of the bronchus was important, and there was great difficulty in the early stages in determining whether the swelling of the mucosa was tuberculous or simply inflammatory. Dr. Rennie agreed with Dr. Joseph that he, too, found it impossible to recognize the heliotrope hue mentioned by Chevalier Jackson. He also agreed that the value of streptomycin could not as yet be fully assessed.

DR. E. SILBERSTERN (Rockhampton, Queensland) stressed the importance of bronchoscopic examinations even after pneumonectomy. He mentioned a patient who, after pneumonectomy, had been free of signs and symptoms for a period, but who later had had an increase in sputum, in which tubercle bacilli were found. A bronchoscopic examination revealed a small ulcer in the operation stump, from which ligatures protruded. After a further course of streptomycin therapy, the sputum became apparently free from tubercle bacilli when examined by both smear and culture.

Dr. Joseph, in reply, said that it was apparent from the discussion that the problem of tracheo-bronchial tuberculosis was well recognized. The question as to whether streptomycin in healing endobronchial tuberculosis might not also enhance a tendency to stricture could not yet be answered; but it would seem logical that if the diagnosis was made early, in the pre-ulcerative stage, and if streptomycin was used, then healing without stenosis was more likely to occur. Dr. Joseph thought that the onus was on the physician to make an early diagnosis. As to the importance of atelectasis, he thought that its occurrence in a lower lobe was harmful, and that it resulted in bronchiectasis with all its possible complications and further spread of the disease. However, if the atelectasis involved the upper lobe where there was good drainage, the same objections did not apply; but as yet its effects were not known, and its occurrence should be avoided if possible.

Treatment of Acute Leuchæmia by Folic Acid Antagonists.

DR. JOHN A. MCLEAN (Melbourne) read a paper on the treatment of acute leuchæmia by folic acid antagonists. He said that folic acid was a necessary factor for the growth of bacteria and was a nutritional requirement for experimental animals and man. It had been found that folic acid concentrates had a stimulating effect on some malignant growths in animals and that folic acid antagonists had an inhibitory effect on those tumours. When that work was applied to man striking results had been obtained in acute leuchæmia, the concentrates producing a stimulating effect and the antagonists an inhibitory effect on the growth of miniature leuchæmic cells. Of the antagonists the most effective had been found to be "Aminopterin", and others, less effective, were "Amethopterin", "Amino-an-fol", and "Aminopteropterin". Reports from the United States had been to the effect that the remissions in acute leuchæmia were characterized not only by chemical improvement, but also by a change towards normal values in blood and bone marrow. Unfortunately the check was temporary only and when administration of the drug was discontinued the condition recurred. One drug also produced toxic effects and its use could not be prolonged indefinitely. Dr. McLean said that during the previous two years he had treated with folic acid antagonists 22 patients who were suffering from acute leuchæmia. He had used "Aminopterin", "Amethopterin"

and "Amino-an-fol". He regarded a complete remission as having occurred when the clinical condition improved and the findings on examination of blood and bone marrow were approximately normal. An incomplete remission was one in which the clinical condition improved but the blood and bone marrow remained in a leuchæmic state. The best results were obtained with children, half of whom had complete remissions. No complete remission occurred with an adolescent or an adult, but half the number had partial remissions. All the patients had had toxic manifestations and in some instances death had been due to them. Dr. McLean described the post-mortem findings in two cases and showed photomicrographs of the cells of the blood and marrow. His general conclusion was that the use of folic acid antagonists in acute leuchæmia was not advisable.

DR. ATHOL ROBERTSON (Brisbane) said that it was difficult to discuss with eloquence a disease of unknown ætiology treated with drugs of which he had had no experience. There was experimental evidence that some types of cancer had a viral cause, and that might also apply to leuchæmia. Dr. Robertson thought that the answer to the question of whether leuchæmia should be treated was "yes and no"—"yes", by a selected number of people to advance knowledge, and "no", by the medical profession at large. So far as the folic acid antagonists were concerned, it seemed that once again clinicians were left helpless in the treatment of acute leuchæmia; but each new drug had to be evaluated, and he hoped that that would be done by investigators of the calibre of Dr. McLean.

DR. C. T. PIPER (Adelaide) said that a sense of defeatism had grown up in regard to acute leuchæmia. That was not justified, and the fact that the child could be kept alive for three months should encourage the use of the drugs concerned in the hope that something more effective might be found.

DR. J. COLEBATCH (Melbourne) asked Dr. McLean if he could suggest why the borderline between the therapeutic and toxic doses of the drugs under discussion should steadily diminish the longer they were used.

DR. W. J. NEWLING (Melbourne) asked Dr. McLean what sites he used for repeated marrow punctures.

DR. P. DORNEY (Hobart) asked whether they were not wasting time in using leucotoxic drugs, and whether they should not pursue their investigations in another direction altogether.

DR. H. S. LUCRAFT (Perth) said that Professor Gye had shown that the continuing cause of cancer was some virus-like organism, and it was possible that by the time of the next congress the answer to the treatment of acute leuchæmia might be found.

Dr. McLean, in reply, said that the cause of leuchæmia was not yet known, but he favoured the neoplastic theory, and thought they would not be able to cure leuchæmia until they could cure cancer. He said that the use of a maintenance dose of the antifolic acid drugs had been considered, but had not been pursued, because Dr. Thiersch had shown experimentally that such doses resulted in widespread toxic effects on normal tissues. Therefore, as soon as a remission had been produced, he ceased to give the drug. As to the sites for marrow punctures, he used the sternum and the spinous processes of the vertebræ when the operation had to be repeated a number of times. He thought that before the folic acid antagonists were used, the parents of the child should have it clearly explained to them that at present the drugs were only at a research level and were toxic, but that their administration might result in temporary improvement. He had found that on that understanding most parents requested that they should be used.

A Symposium on Diabetes Mellitus.

The Ætiology of Diabetes Mellitus.

DR. EWEN DOWNIE (Melbourne) read a paper entitled "The Ætiology of Diabetes Mellitus". He approached the subject from the historical point of view. He pointed out that the clinical picture of diabetes had been described before the Christian era and had been named by Aretaeus (A.D. 30-90). Avicenna (980-1037) had regarded it as a primary disease, but thought it could arise secondarily to some other disease. The sweetness of diabetic urine, first noted by Susruta in the sixth century, had also been noted by Avicenna, and Dobson in 1778 proved the sweetness to be due to sugar. The first association of diabetes with pancreatic disease was attributed to Cawley (1783). Cullen (1709-1790), who regarded diabetes as a disease of the nervous system, first applied the term "mellitus" to it.

Dr. Downie then referred to the growth of chemical knowledge in the later part of the eighteenth century and the early part of the nineteenth and to the work of Claude Bernard on glycogen and the glycogenic function of the liver, to his production of glycosuria by puncture of the fourth ventricle and to his postulation of the formation of sugar in the body from non-carbohydrate sources. Bouchardat (1806-1886) had been the first to suggest an influence of the pancreas on the causation of diabetes. The occurrence of diabetes in dogs after pancreatectomy had been accidentally observed by von Mering and Minkowski in the last decade of the nineteenth century, and Dr. Downie pointed out that this discovery, which was to dominate medical opinion on the ætiology of diabetes for the next thirty years, emphasized an earlier observation of Langerhans on the existence of certain groups of island cells, whose function appeared to be unrelated to those of the pancreatic parenchyma. It was in 1904 that Opie discovered degenerative changes in the cells of Langerhans in human patients suffering from diabetes. In 1910 Woodyatt had expressed the hypothesis that had developed, in words which included the statement that the failure of sugar combustion depended on the lack of "a something derived from the pancreas". This view had gained general acceptance, and then Allen had declared that the islands of Langerhans were an internal secretory organ, that diabetes arose solely from pancreatic dysfunction, and that diabetes was a "unified entity, rather than a disjointed symptom complex". All attempts to isolate an extract which might influence the course of the disease had proved unavailing until Banting and Best in 1922 produced insulin. Dr. Downie went on to say that at this stage it seemed certain that *diabetes mellitus* arose as a result of a quantitative deficiency of insulin and that once the cause of pancreatic dysfunction was discovered a cure could be anticipated. He pointed out, however, that the isolation of insulin, apart from its incalculable value in clinical medicine, had stimulated a large amount of clinical and experimental work which was turning opinion away from Allen's conception of the primarily pancreatic origin of the disease and even from the idea that it was a single disease entity. Dr. Downie referred to the observations of several authors, which confirmed this statement and emphasized the difficulties of interpretation of findings. He mentioned the role of the ductless glands and observations made in regard to them, and he referred to observations on alloxan. He pointed out that it was still uncertain how insulin acted and where in the complicated chain of carbohydrate metabolism it exerted its influence. He dealt briefly with Soskin's theory of the regulation of the level of the blood sugar by hormonal control, with the influence of heredity and the factors of age and sex. In regard to obesity, he said that it had been shown that in some instances symptoms disappeared and the glucose tolerance test curve resumed a normal pattern if a patient's weight was reduced. This observation was important as it appeared to contradict any idea of pancreatic exhaustion as a primary factor in ætiology.

Dr. Downie then referred to the work of Falta and of Himsworth on sensitivity to insulin. His concluding statement was that the one essential feature of *diabetes mellitus* was abnormal hyperglycæmia which might arise, at least in some instances, from an increased utilization or destruction or inhibition of insulin rather than from a primary decrease in its production. Much remained to be discovered, but at the present time the disease was better regarded as a symptom complex resulting from any one of a number of causes than as a disease *sui generis*.

The Statistics of Diabetes.

DR. H. O. LANCASTER (Sydney) read a paper in which he discussed the statistics of diabetes in New South Wales. In his opening remarks he said that if the prevalence of a chronic disease in a community was known, it might be of administrative importance in regard to clinic accommodation likely to be required, and it would throw light on the natural history of the disease. He discussed the means by which the prevalence rates of *diabetes mellitus* might be ascertained and he showed several tables based on data obtained from the number of ration cards applied for by diabetics in New South Wales. From June, 1944, to June, 1945, the number of persons making application had been: males, 2828; females, 5416—total, 8244. For the year June, 1945, to June, 1946, the numbers had been: males, 2631; females, 5383—total, 8014. The figures for June, 1944, to June, 1945, were analysed according to age groups. From ages 0 to 14 years, the figures were: males, 36; females, 50. From age 15 to 19 years the figures were: males, 43; females, 44. The highest figures were in age group 50 to 59 years and were: males, 697; females, 1408. Next came age group 60 to 69 years: males, 550; females, 1312. When the number of applicants were set out in age groups per thousand of population, the highest percentages were in age groups 60 to 69 years and 70 to 79 years. There was no way of determining how many diabetics did not apply for ration cards. Dr. Lancaster said that his investigations suggested that the diabetic incidence in New South Wales was of the same order as that in America, which was in keeping with the mortality figures.

Pathological Aspects of Diabetes.

DR. W. E. KING (Melbourne), in a paper on "Pathological Aspects of Diabetes", confined his remarks to three facets not so widely known and recognized as the more extensively described features. He dealt with the presence of glycogen in the liver cell nuclei, and lesions seen in the glomeruli and papillæ of the kidney. These damages, if looked for, occasionally led to the correct pathological diagnosis in cases in which diabetes might not have been suspected clinically; this applied principally to death in coma. The condition of intranuclear glycogen could be demonstrated by ordinary hæmatoxylin and eosin staining. The nuclei were larger than normal and had a characteristic bloated appearance. They were best described as "halo nuclei". Their distribution was not even, but they occurred in groups. Staining with Best's carmine showed the nuclei to contain a pink granular material—a single clump of glycogen or one or more granules. These glycogen-containing nuclei bore an inverse relationship with the cytoplasmic glycogen. This appearance was typical of *diabetes mellitus*. It might occur in other conditions, but then a search had to be made for the nuclei. When the nuclei occurred in definite groups diabetes was the underlying disease. The condition of intercapillary glomerulosclerosis was recognized by the presence of hyaline material in the glomeruli between the capillary loops; it might be associated with thickening of the afferent arteriole. The severity of the condition was usually assessed by the relative amount of hyaline material in each glomerulus and by the number of glomeruli involved. Dr. King said that the nature of the hyaline material had not been finally settled. There could be no doubt that the severe grade of this condition was specific for diabetes. The mild form (also called the diffuse form) was regarded by many as an early stage of the condition. In regard to associated lesions Dr. King said that there was no direct clinical relationship between intercapillary glomerulosclerosis and hyalinization of the islands of Langerhans. On the other hand advanced retinopathy, especially of the diabetic type, was consistently associated with glomerular changes. The third change discussed by Dr. King was papillary necrosis. Microscopically there was an acute pyelonephritis and the involved papillæ showed necrosis of all their elements without any inflammatory infiltration. It appeared that 10% to 12% of diabetics at autopsy showed evidence of pyelonephritis. Approximately one-quarter of these showed papillary necrosis—the lesion might be found in about 4% of diabetics at autopsy. Against this, in non-diabetics it might be found in only 0·06% of cases, and in most of these it was associated with urinary obstruction. Dr. King discussed the pathogenesis of the condition. His conclusion was that all three lesions discussed by him might be seen in non-diabetics, but their presence in a definite recognizable form might be taken as pathological evidence that the patient suffered from *diabetes mellitus*.

Why Diet the Diabetic?

DR. BRUCE HUNT (Perth) read a paper entitled "Why Diet the Diabetic?", in which he analysed the records of a series of 191 diabetic patients in his private practice between April, 1946, and April, 1950; Dr. Hunt had been personally responsible for the treatment of all the patients. There were 76 males and 115 females, and their ages ranged from one year and ten months to eighty-four years, the numbers being greatest in the fifth, sixth and seventh decades. All the patients were treated with adequate dosage of protamine zinc insulin, except for 19 cases in which it was judged wise to give ordinary insulin twice a day. The only dietary restrictions were (i) those agreed upon by Dr. Hunt and the patient to reduce obesity when necessary, and (ii) a general warning against consuming much sugar or cake late in the afternoon. Dr. Hunt said that, as it did not seem possible to cure diabetes, the next best thing was to make and keep the patient well, happy and economically efficient—in other words, physiologically, psychologically and sociologically normal. In his opinion every diabetic did best if given adequate insulin and an unrestricted diet. He discussed the chief reasons advanced for the dieting of diabetics. (i) It was bad to diet patients to avoid the necessity for giving insulin; all diabetics, irrespective of age, were better off with insulin, and people with mild diabetes in middle age, if not given insulin, were later prone to develop gross arteriosclerosis, peripheral and cerebral, retinitis, cataract and gangrene. (ii) There was no foundation for the belief that the insulin dose should be kept as low as possible. (iii) Dieting was unnecessary to maintain diabetic stability; normal people varied their food intake in accordance with their activities, the weather and the state of their alimentary tract; the food requirements of diabetics varied in exactly the same way. (iv) The need to maintain an adequate intake of essential foodstuffs applied to everybody, not specifically to diabetics. (v) The fact that diabetics had always been dieted did not lend any force to the argument that they should be dieted. (vi) Dieting to banish or prevent obesity was a sound idea; but it applied to everybody, not specially to diabetics. Fat diabetics should certainly be reduced to normal proportions by suitable modifications of diet. (vii) Dieting was held to be necessary to prevent diabetics from becoming arteriosclerotic. Dr. Hunt's experience of giving generous diets for twenty years and almost unrestricted diets for fifteen years was that arteriosclerosis did not develop prematurely in the diabetic receiving such diets who was treated early and adequately with insulin, but did develop in the patient whose treatment had consisted of diet alone or diet with an inadequate amount of insulin. Dr. Hunt said that, in spite of all the arguments advanced, he had found it best for the patients to allow them to eat normal meals in a normal manner, unless they were obese, and he discussed in detail the advantages to the patient of freeing him from irksome restrictions which intruded into all his activities.

Discussion.

DR. KEMPSON MADDOX (Sydney), in opening the discussion, said that Dr. Lancaster's statistics filled a long-standing need. It would now be possible to compare the figures for prevalence of diabetes for longevity among diabetics and for mortality with those of other countries, and in particular with the superb records kept by Dr. Elliott Joslin and analysed by the Metropolitan Life Assurance Company of New York. So far as one could tell, the over-all problem of diabetes in Australia was no less than in any other prosperous country; and yet its importance and the care of diabetics did not appear to have impinged at all upon the public health authorities

of Australia and New Zealand. The regretted reluctance of life assurance societies to accept diabetics, even with loading, also required comment. The Rationing Commission at the outbreak of war had no conception whatever of how much rationed foodstuffs should be reserved for diabetics; and those physicians who were approached for that information could make only the widest guesses. With Dr. Lancaster's contributions now available, some approximation would be possible. If part of the next census was devoted to questions about chronic disease, and if the health of a sample of the community was surveyed by a national agency, it would probably be found, as in the United States of America, that an undiscovered diabetic existed for each known diabetic.

Dr. Maddox went on to say that it was now known that genes existed for specific enzymes, and that such metabolic faults were transmissible according to Mendelian laws. It was beginning to look as if diabetes developed as the result of over-stimulation of the β cells by certain pituitary hormones, probably the growth hormone, and perhaps the adrenocorticotropic hormone and the lactogenic hormone. Those hormones probably had extrapancreatic effects—for example, interference with the peripheral utilization of glucose. Once hyperglycæmia, however produced, had continued for long enough, permanent diabetes resulted. Unlike the so-called "unborn errors of metabolism", however, the delicate insulin : anti-insulin balance was not disturbed from birth, or even as a rule in childhood, when presumably the growth hormone was least suppressed; but some other factors were required, perhaps psychosomatic factors, perhaps a relative excess of Calorie intake or of fat, or the occurrence of pregnancy or the menopause, or increasing age, to weight the endocrine scales. In animal experiments, too, young growing animals were more resistant to diabetogenic agents than were adults. The clinical state of diabetes as it was known was perhaps a final common scene, created by many artists. The prediabetic woman stood revealed by her obstetric history. Dr. Maddox said that during the war he had examined two officers who developed acute diabetes after battle experiences. Both nearly recovered, but not quite. Now that the pituitary hormones were becoming available in pure form, and that there were men with the courage of Conn and his students, who were prepared to try their effects on man, it was likely that within the lifetime of those present the actual ætiology of diabetes would be fully exposed. Dr. Downie had placed before them a mature appreciation of the trend of present knowledge. In recent years fruitful work into the biochemical pathology of diabetes had outshone that devoted to structural changes. Dr. Maddox said that he had no qualifications to discuss either of those aspects, except to express his appreciation of Dr. King's presentation. He believed that it had recently been shown that the hyaline intercapillary substance to which Dr. King had referred was a carbohydrate, removable from sections by pectinase, and that it was probably formed from the blood rather than from the basement membrane. From the clinician's viewpoint, evidences of gross renal involvement took much longer than six years to appear, and when they did, the diabetic state appeared to improve. Papillary necrosis was difficult to differentiate from pyelitis on clinical grounds. It represented the renal counterpart of the gangrenous lung or limb, which was seen in the untreated diabetic, whose tissues generally displayed a low resistance to trauma or infection. Dr. Maddox had been surprised by Dr. King's figures on the prevalence of pyelonephritis in diabetic males.

Turning finally to the question of the standard of diabetic control and the technique of treatment, Dr. Maddox said that there was no doubt about the capacity of many régimes to return the diabetic subject quickly to a state of well-being and apparent good health. That was the experience both of those who frowned and of those who smiled at glycosuria. He drew attention to a class of diabetics who were notoriously difficult to render normoglycæmic—namely, the children, whose nutritional requirements were constantly changing, and in whom exercise and infective and emotional factors were all potent disturbers of peace in carbohydrate metabolism, not to mention dietary indiscretions. In that respect "control" was a relative term, despite the strictest limitations, and obviously there were some periods of hyperglycæmia every day in all moderately severely diabetic subjects, whether adults or children. It was known that, if the diabetic child was treated early, and with complete cooperation between physician and parent, it was possible to restore his metabolism to normal. It was known that the longer a diabetic child's condition was incompletely controlled, the more difficult it became to reestablish the blood sugar level within the normal range. That was the counterpart of the experimental animal, whose partial diabetes could be rendered complete by a continuance of unrelieved hyperglycæmia, and of Luken's cats, which eventually became diabetic if glucose was injected for long enough. It was known, too, that experimentally hydropic degeneration of the β cells of the islets resulted from overwork and exhaustion. While no one was as yet prepared to affirm that hyperglycæmia of itself was the cause of diabetic complications in the eyes or blood vessels, there had been several careful studies which proved that good control would delay and possibly prevent such degenerative changes. One of those concerned a ten-year study of 208 juvenile diabetics by Hardin *et alii*, of Iowa University, and another, Priscilla White's report of 192 children followed from ten to twenty years. Careful independent statistical analysis of those series indicated the harmful long-term effects of an uncorrected or partially corrected diabetic state. Dr. Maddox said that in his view, it was impossible to control diabetes properly without some tears, even though one might be sorely tempted to enter Dr. Hunt's glycosuric paradise.

DR. J. COBLEY (Sydney) said that clinicians treated the diabetic because they wished to control his hyperglycæmia. Surely diet had a place in controlling the diabetic state, for it must be apparent that the patient on a lower insulin dosage was in better control than one whose dosage had to be high because of an uncontrolled diet. There need be no restriction of the movements of the diabetic who had learned to recognize the quantity and quality of the food he might eat.

DR. S. ROBERTSON (Sydney) took up the cudgels on behalf of Dr. Hunt, and said that the use of the free diet for children since 1932 in one of the important Scandinavian clinics had not resulted in a greater incidence of vascular disease than that shown by the figures of Priscilla White. Diets recommended by recognized authorities varied so greatly that if the patient was left to his own dictates the diet he would choose was not likely to differ greatly from any one of them. Dr. Robertson thought that the influence of Joslin on the English-speaking diabetic world had lain rather too heavily for a long time, and that it was time notice was taken of some of the Continental diabetic experts.

Another speaker said that Rabinowich had first advocated the free diet for diabetic children with insulin dosage varied as required. Dr. Hunt had not told the meeting how he guided the insulin needs of his patients. The speaker thought that important criteria were the weight and well-being of the patient, and that the sugar content of the urine was of secondary importance.

DR. O. HIRSCHFELD (Brisbane) congratulated all the speakers on their papers. He thought that Dr. Maddox had over-emphasized the difference between free and orthodox diets. Those on a free diet generally ate too little carbohydrate because of fear and attention to advice from their friends. Dr. Hirschfeld found that 20 patients who were on a free diet were eating less than 100 grammes of carbohydrate per day. He wondered how Dr. Hunt avoided hypoglycæmia in his patients if he told them to vary their insulin intake with the results of their urine tests.

DR. IAN WOOD (Melbourne) said he hoped that an attempt would be made to find out which of the opposing factions was right. It was important to know just what Dr. Hunt's patients ate, and Dr. Wood considered that Dr.

Lancaster should visit Western Australia and analyse the diabetic figures there as he was doing in New South Wales.

Dr. Downie, in reply, said that Dr. Hunt's paper had been most stimulating and provocative, but he thought it had been a masterpiece of antithetical argument. A diabetic could be just as well, happy and efficient with a certain amount of diabetic discipline, and even on Dr. Hunt's scheme there must be some form of discipline with regard to urine testing and insulin. Dr. Downie said that he would be interested to know the way in which hypoglycæmia was avoided when patients on a free diet undertook exercise. Surely a diabetic patient was kept on a more even keel if both his diet and his insulin were fixed; but it was important to adjust the diet to the patient and not the patient to the diet. A diabetic patient could not escape from his complaint, and so Dr. Hunt's remarks regarding the psychological effect of diet were irrelevant. Dr. Hunt had made one or two extraordinary statements. Firstly, he had said that all diabetics required insulin, which was at variance with world experience. Secondly, he had made the sweeping statement that arteriosclerotic changes were not present in patients receiving a free diet. In his experience, the incidence of arterial degeneration became greater the longer the patient lived.

DR. T. E. LOWE (Melbourne) thought that the speakers on both sides had been guilty of dealing entirely with a problem of practical politics, and he supported Dr. Ian Wood's plea for a thorough scientific investigation of the problem. He said that there were two opposing groups conducting a large-scale experiment in human physiology, and it behoved those present to discover on which side lay the proof. They should remove emotional content from the discussion and ask Dr. Lancaster to analyse the figures. Dr. Lowe asked whether it was not possible that those people who had inherited the gene of diabetes had also inherited the large-volume, low-density cholesterol molecules which led to the development of arterial degeneration.

Dr. Lancaster, in reply, said that the frequency of diabetes in relatives over a period of time was apt to be fallacious. An adequate follow-up was of paramount importance, but it required a great deal of time and work. In that regard, Joslin's figures were an example to the rest of the world. The stigma of diabetes was now much less than formerly, since the frequency of the disease had greatly increased, and it would be even less if people realized that 30% of the population carried the diabetic gene.

Dr. Hunt, in reply, said that his head was bloody but unbowed, and thanked Dr. Lowe for bringing the discussion back to a cold scientific level. He said that there was nothing emotional about the fact that only one of his 196 patients developed coma. Dr. Wood's remarks were most important—what happened to those patients? Dr. Hunt had seen all the diabetic children in the Perth Children's Hospital between 1930 and 1941. Only two of them had died and the rest were breathing freely. Dr. Hunt went on to say that Dr. Maddox and Dr. Cobley had misunderstood him, for he was speaking not of the control of the diabetic patient but of the control of diet. He knew the biochemical state of his patients, and while he agreed that it was vital to control hyperglycæmia, a regulation of diet was not essential to that. His free diet differed little from the "high carbohydrate" diet of Samsom advocated in 1930. Dr. Hunt did not say that all diabetics needed insulin, but that they were all better off with it. He would welcome Dr. Lancaster to Western Australia; but some method other than the use of extra butter ration cards for determining the number of diabetics would need to be used, because none of his patients were treated to that consideration.

Sodium and Water Balance in Congestive Heart Failure.

DR. T. E. LOWE (Melbourne) read a paper in which he reported the results of a study made by him of sodium and water balances in congestive cardiac failure. He explained that the cause of the congestion was to be sought outside the heart, although the train of events was frequently started by cardiac damage. Associated with an increase in blood volume there was an increase in the extracellular fluid of the body and this fluid had a sodium content very like that of normal plasma. This meant that sodium retention as well as fluid retention was taking place. Sodium retention implied either diminished filtration of sodium through the renal glomeruli or excessive reabsorption from the renal tubules. In this connexion it had to be remembered that the excretion of both water and sodium by the kidney was to some extent under hormonal control by the posterior lobe of the pituitary and by the adrenal glands. Dr. Lowe reported four cases which, he stated, provided evidence that there were two types of congestive failure which differed in their response to treatment. The first two patients became free of œdema and lost the congestive aspects of cardiac failure after rest in bed, restriction of sodium intake and the free injection of fluids; the last two failed to respond appreciably to these measures, but responded to mercurial diuretics. In the two last cases the urine contained an excessive amount of pituitary antidiuretic hormone. Dr. Lowe said that the cases studied by him were too few to allow him to reach definite conclusions, but the cases reported supported Starr's contention that the pituitary gland secretions did play some part in the production of congestive cardiac failure.

DR. L. D. WALTERS (Brisbane) congratulated Dr. Lowe on having directed attention to factors outside the failing pump. Dr. Walters said that the paper presented the views of Peters on the physiological disturbances in congestive cardiac failure, and projected on the screen the conflicting theories of Starling and Stead. Peters had drawn attention to the dehydration reaction, reduction of the circulating volume producing a rise of sodium concentration in the plasma, which led to hypertonicity with resulting stimulation of osmoreceptors at the base of the brain. That stimulated the production of antidiuretic hormone, which led to greater resorption of water from the tubules. A rise of sodium concentration in the interstitial fluid resulted in mobilization of water from the cells, which tended to restore blood volume. The dehydration reaction was invoked by water deprivation, cardiac failure or hypoalbuminæmia. Dr. Walters recounted the case of a patient who had developed pulmonary œdema in the later stages of pregnancy, and who subsequently recovered. As she later showed no evidence of cardio-vascular disease, he thought that the apparent cardiac failure might have been caused by an abnormality of hormone balance similar to that in the cases mentioned by Dr. Lowe, in which an excess of the antidiuretic hormone had been shown to be present.

DR. J. H. HALLIDAY (Sydney) said that he still believed that the heart itself played an essential part in congestive cardiac failure, although there was more to its occurrence than mere failure of the pump. The discussion had, in his opinion, ranged around secondary mechanisms. They should forget the battle between the forward and backward failure theories, and realize that the loss of normal output initiated a train of secondary reactions.

DR. M. JOSEPH (Sydney) said that it had been shown that the rate of reduction of œdema was independent of the fluid intake so long as sodium intake was restricted, and in fact, that the forcing of fluids could lead to the loss of œdema by flushing sodium from the system. It was important to realize that an œdematous patient might yet suffer from tissue dehydration, and he was glad to note that the previous habit of restricting the water intake of patients with congestive cardiac failure was rarely practised. Dr. Joseph asked Dr. Lowe's opinion of salt substitutes such as "Neocursal".

DR. KEMPSON MADDOX (Sydney) asked whether in the last two cases described by Dr. Lowe the renal function had been investigated, whether a renal threshhold of antidiuretic hormone had been found, and whether any method had been devised of estimating its concentration

in the blood. Dr. Maddox had been impressed by experiments of Kingsley Harrison, who had administered large quantities of sodium to medical students, thereby producing an increase in weight and in some cases a clinical œdema. Hormone balance in cardiac failure required further investigation, and Dr. Maddox was glad to hear that Dr. Lowe planned to extend his research in that direction.

Dr. Lowe, in reply, agreed that congestion might be phasic, retention being followed by diuresis. Patients, though œdematous, might have a dry brown tongue because they were too weak and apathetic to worry about food and drink. In those cases he had found the administration of fluid by the intragastric drip method to be valuable. He considered the hormone story to be most important, and thought that there was more to it than the simple disturbance he had suggested. He was grateful to Dr. Halliday for emphasizing that the heart still played a part in cardiac failure; but whereas the back pressure theory might be satisfactory to explain the events of left ventricular failure, it was inadequate to explain those of right-sided heart failure. In reply to a question, Dr. Lowe said that he thought *Pilula Diuretica* was of value because it kept up a small continuous concentration of mercury. He had never used salt substitutes, because those containing lithium he regarded as dangerous, and the others containing up to 75% of potassium chloride might also be harmful. Dr. Lowe said that there was no simple method of assaying the antidiuretic hormone in the blood. His patients were given approximately 200 milligrammes of sodium per day. Dr. Lowe thought that they should beware of hyponatræmia, which could result from a combination of prolonged sodium restriction, a high fluid intake and the exhibition of mercurial diuretics.

Sarcoidosis: Diagnosis and Management.

DR. BRUCE ROBINSON (Melbourne) discussed the diagnosis and management of sarcoidosis. He said that over a period of three years an investigation had been carried out at the Pathology Department, University of Melbourne, into the natural history of sarcoidosis; 75 cases had been examined, and in 30 the diagnosis of sarcoidosis had been proved. Dr. Robinson said that as the ætiology of sarcoidosis was unknown, criteria of diagnosis were necessary. Those used were the following: (i) the presence of a group of signs suggestive of the disease; (ii) the typical histological appearance of biopsy material; (iii) the chronic and relatively asymptomatic course of the disease; (iv) the difficulty of demonstrating the tubercle bacillus by any method; (v) the absence of tuberculin sensitivity, which might change during the course of the disease.

As sarcoidosis was a generalized disease, it might affect many organs, and a patient might be examined first by a practitioner in one of many branches of medicine. The commonest features at the clinical onset were: general constitutional symptoms (17 cases), enlarged lymph nodes (13 cases), characteristic chest X-ray findings (12 cases), and skin lesions (nine cases). The sites mentioned could be readily examined; there were no means of assessing the degree of involvement of the body as a whole. In the absence of one of the classical lesions, a clinical diagnosis could not be made. It was necessary also to have evidence of a generalized disease—isolated lesions could be due to other conditions. Dr. Robinson enumerated generalized diseases having manifestations resembling those of sarcoidosis; tuberculosis was the most important, and in some cases it was difficult to distinguish.

When a patient presented with lesions suggestive of sarcoidosis, the following procedure should be used. (i) A history should be taken, with questions about contact with tuberculosis and about previous lesions suggesting sarcoidosis. The generalized constitutional symptoms were found to be associated with progressive extensive tissue involvement and usually with gross X-ray changes in the lungs, which might persist after the symptoms had ceased. (ii) The patient should be examined for a generalized disease. (iii) Investigations should include (*a*) an X-ray examination of the chest, (*b*) an X-ray examination of the phalanges, (*c*) a blood examination to exclude other diseases, (*d*) a Mantoux test (if the result was negative it was a great aid), (*e*) a search for *Mycobacterium tuberculosis* (it had not been found in the sputum or on gastric lavage in the cases observed), (*f*) a biopsy, and (*g*) other investigations. With regard to (*f*), biopsy, Dr. Robinson said that the lesion was characteristic but not specific, but when taken in conjunction with other available data, biopsy evidence provided the only means of making a positive diagnosis. Biopsy should be carried out early, as in a remittent disease. With regard to (*g*), other investigations, such as estimation of the albumin-globulin ratio and the blood sedimentation rate, and electrocardiography, were not of value in diagnosis or prognosis. If no biopsy was obtainable, a sound clinical diagnosis could be made if there were sufficient characteristic signs. If there were only a few signs, only a tentative diagnosis could be made. The patient should be investigated to exclude other conditions, and watched.

No restrictions were imposed on the patient after the general constitutional symptoms had passed. The disease was not regarded as infectious. There was need of regular review, and the patient should be warned of the development of tuberculosis. Treatment was not satisfactory. The administration of calciferol was the only form that appeared to affect the process as a whole. It produced toxic symptoms, and routine serum calcium estimations were needed if the doses were high. In view of uncertain results and possible toxicity, calciferol should be used only when symptoms or disfigurement were present. Irradiation gave at least temporary relief in some cases. Symptomatic treatment might be required for eye, ear, nose, throat and skin involvement.

The prognosis was difficult, as the extent, course or duration of the disease could not be estimated. The general symptoms would cease, but serious lesions (for example, in the eye) or disfiguring lesions might develop even after a long "latent" period. Of patients 10% developed frank tuberculosis.

DR. D. P. HANNAFORD SCHAFER (Brisbane), in opening the discussion, said that a whole morning had been devoted to sarcoidosis at the international conference of physicians in London in 1948, which he had attended, and he recounted some of the views which had been expressed at that meeting. Professor Cameron had stressed the multiplicity of lesions and had said that the liver and spleen were rarely enlarged, the organs most frequently involved being the lungs, lymph glands and skin. Dr. Robb-Smith had said that the disease had a uniform pathology, and Dr. Scadding had stressed the value of liver biopsy. Dr. Clifford Hoyle said that of 135 suspected cases referred to him, the diagnosis was certain in 16 and probable in a further 14; thus there was a five to one chance that the diagnosis of sarcoidosis was incorrect. Dr. Lomholp had said that patients suffering from sarcoidosis tolerated calciferol less well than patients suffering from lupus.

DR. COTTER HARVEY (Sydney) said that Scadding might be right in asserting that there was no one ætiological factor. Patients could die of sarcoidosis, but some died of complicating tuberculosis; but it was also known that patients suffering from Hodgkin's disease not infrequently died of tuberculosis, yet no one had suggested that that was an atypical form of tuberculosis.

DR. M. JOSEPH (Sydney) congratulated Dr. Robinson on his careful follow-up in so many cases of the rather uncommon disease under discussion, and he was pleased to note that the work of Professor C. G. Lambie had been recognized. Patients who presented the greatest difficulty were those in whom there were suggestive radiological signs in the lung without any other supporting evidence. Dr. Joseph asked whether Dr. Robinson had used tonsil biopsy and the Kvien skin test as an aid to diagnosis.

DR. G. C. TAYLOR (Brisbane) said that he had had experience of two cases, both of which were fatal. One patient died of torulosis, though examination of sections of the mediastinal lymph glands revealed pathological appearances regarded as suggesting a typical sarcoidosis.

DR. J. A. INGLIS (Brisbane) said that with the knowledge of Dr. Taylor's case he had performed an autopsy on a patient who had died from torulosis, and had been surprised to find histological lesions in the mediastinal lymph glands indistinguishable from those of sarcoidosis.

DR. J. HUGHES (Melbourne) said that he had had five cases of sarcoidosis in the last six years. He regarded it as a disease of the reticulo-endothelial system with widespread manifestations. He traced the history of the disease and pointed out that priority should go to Dr. Jonathan Hutchinson. The manifestations of sarcoidosis had been studied separately by a variety of specialists, but it remained for Schumann to integrate them as a single disease in 1914. Dr. Hughes thought that the incidence of sarcoidosis was approximately one-tenth that of Hodgkin's disease.

DR. J. L. GROVE (Launceston, Tasmania) said that he thought the disease occurred more commonly in Tasmania than in the rest of Australia, and in his opinion involvement of the central nervous system was of frequent occurrence.

Dr. Robinson, in reply, said that a number of patients had been referred to him by the tuberculosis bureau and through mass radiological surveys; but only one had shown signs of sarcoidosis other than the radiographic changes in the lungs. Such patients should be kept under observation for a long time. Dr. Robinson considered the histological appearances of sarcoidosis to be characteristic but not specific. He did not think it possible to make any definite statement about ætiology, but he had a feeling that sarcoidosis was likely to prove to be an atypical form of tuberculosis. With regard to tonsil biopsy, he said that unfortunately most adults had already had their tonsils removed. In conclusion, Dr. Robinson said that they expected a supply of Kvien's antigen shortly and would then try that skin test as an aid to diagnosis.

Cardiac Lesions in Poliomyelitis.

DR. I. O. THORBURN (Perth), in a paper on cardiac lesions in poliomyelitis, said that the range of spread of poliomyelitis virus through the human body was gradually being worked out. Besides the more common forms of the disease, and usually in addition to the more severe forms of nervous system involvement, there were detectable indications that other systems of the body could be affected—for example, arthritis of the shoulder or involvement of the cardiac muscle. Clinically myocarditis had been described first, and later post-mortem findings confirmed the presence of lesions in the heart muscle in association with poliomyelitis. Between January, 1948, and March, 1949, in Western Australia there was an outbreak of poliomyelitis; 27 patients out of 279 died. In that period there were nine cases in which cardiac lesions were identifiable clinically; the ages of the patients ranged from sixteen to thirty-four years, and seven of the nine died. The most important cardiac irregularity detected clinically was auricular fibrillation; it occurred in the seven patients who died. The cardiac lesions in the two patients who survived were slightly different in character; in one case temporary gallop rhythm was present, and in the other bacterial endocarditis with swinging temperature, enlargement of the spleen, petechial hæmorrhages and a systolic murmur at the apex. In the latter case the cardiac condition responded to penicillin treatment, so apparently it was not caused by the poliomyelitis virus; however, six and seven weeks after the onset of paralysis the patient had several bursts of auricular fibrillation, which subsided spontaneously. It was impossible to determine whether the fibrillation was due to the poliomyelitis or to the bacterial endocarditis. He was left with a systolic murmur in the mitral region. Dr. Thorburn, in conclusion, said that in the small series of cases presented there were clear clinical indications of extension of poliomyelitis infection beyond the nervous system.

DR. F. J. BOOTH (Brisbane), in opening the discussion, said that the paper represented an effort on the part of an experienced clinician to present what he considered to be cardiac involvement in poliomyelitis. One might ask whether he had collected all the available evidence about cardiac complications in poliomyelitis. The question of myocardial damage should be based on presumptive evidence, chiefly changes in serial electrocardiograms. One might then ask whether Dr. Thorburn had then given the correct interpretation of the evidence. In America it had been established that myocarditis did occur in some severe and fatal cases of poliomyelitis, but no authority had yet isolated the virus from the cardiac muscle, and until that was done the question of a direct attack by the virus on the myocardium must remain in doubt. Dr. Booth thought that the virus might well affect the heart indirectly. Some clinicians had a tendency to follow fashions in therapy while denying their patients the benefit of modern methods of diagnosis, and diagnosis was important above all else in medicine. The paper under discussion reminded those present that their knowledge of medicine was still far from complete, and that applied especially to poliomyelitis.

DR. H. MCLORINAN (Melbourne) said that Dr. Thorburn's contribution from Western Australia was of the utmost importance. A few patients who had died from causes unknown had been investigated by the government pathologist in Melbourne, who had a special interest in poliomyelitis, and he had found evidence of myocarditis together with the pathological changes of poliomyelitis in the central nervous system. In bulbar poliomyelitis, in which there was disturbance of the vasomotor centre, it was possible that the ensuing cardiac irregularities might be mistaken for true myocarditis.

Section of Paediatrics.[1]

President: Robert Southby, M.D., B.S., M.R.A.C.P., Victoria.

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Honorary Secretary: A. E. Paterson, M.B., Ch.M., Queensland.

President's Address.

DR. ROBERT SOUTHBY (Melbourne) took as the title of his president's address, "Therapeutic Diagnosis in Pædiatrics". He urged the importance of not overlooking a careful history and a careful clinical examination. In that connexion the old advice still held: "Eyes first and most. Hands next and little. Tongue not at all, or last and least." There had been in recent years too much tendency to depend on specialized departments for the last word in diagnosis and even treatment. Dr. Southby then set out a number of hypothetical cases to show how appropriate therapeutic measures might not only relieve the condition, but also determine a doubtful diagnosis. The first was the case of the normal newborn baby, who on the morning of the third day, in hot weather, and in a busy hospital, was found to have a high temperature, pulse rate and respiration rate, and to have lost weight. An infection might be diagnosed and the baby given chemo-

[1] The meetings held by the Section of Pædiatrics with the Section of Anæsthesia and the Section of Surgery, and with the Section of Obstetrics and Gynæcology, have been recorded.

therapy; but all he needed was an ample supply of boiled water—he was suffering from dehydration fever of the newborn. Persistent vomiting in a baby aged a few weeks would arouse fears of pyloric stenosis, but other findings might be equivocal. X-ray examination after an opaque meal suggested pyloric spasm; and the diagnosis was settled by cessation of the vomiting after the barium meal. The lesson was, in similar circumstances, to give the baby one drachm of pure barium sulphate with one feeding; if the condition subsided it was one of spasm. Another case was that of the baby, aged about eleven months, who had been artificially fed from about five weeks, and who had had no orange juice for some months because he did not like it. His symptoms and signs pointed to "teething trouble", or incipient pink disease. Further examination disclosed scurvy, and response to intensive ascorbic acid therapy clinched the diagnosis. The baby of nine or ten months who had always been troubled with severe constipation but who appeared perfectly well and showed no signs of endocrine disturbance, would often respond dramatically to the administration of thyreoid extract. Confirmation of the thyreoid deficiency was forthcoming if the constipation recurred when thyreoid administration was stopped. Turning to allergic conditions, Dr. Southby mentioned first asthma. He referred to the child who had cough with some noisy breathing, worst at night after she had retired; there was a family history of allergy, but no seasonal incidence of the cough. It proved to have dated from a change from a flock to a kapok pillow, and a change to a hygienic wool pillow gave complete relief. Incidentally, a persistent and irritating cough at night might be due to mechanical irritation from a long, lax, œdematous uvula, or from an acute sinus infection, a considerable amount of thick mucopus trickling down the back of the naso-pharynx. Severe and intractable eczema in an infant aged about seven months, since weaning was carried out at the age of five months, might be due to allergy to orange juice punctiliously given by the mother. An eight-years-old boy, an only child, always nervy and highly strung, who was often sent home from school on account of "bilious attacks", and who had a family history of hay fever and asthma, and whose mother was under the care of a psychiatrist, should always arouse suspicion of migraine. The administration of suitable sedatives over long periods caused the attacks to subside fairly quickly; but they recurred if the treatment was stopped too soon. Dr. Southby then mentioned achlorhydria, which he recognized as the chief trouble of three types of children: (i) infants with the so-called "lienteric" type of diarrhœa; (ii) the pale child sent home from school on account of "anæmia"; (iii) the child apparently suffering from "ulcerative colitis". The dramatic response to adequate amounts of dilute hydrochloric acid decided the question. Dr. Southby referred to a condition akin to familial periodic paralysis; affected children suffered in the early morning from malaise and lassitude, which had gradually increased so as to prevent them from making a start at school until nearly the middle of the morning. They might be punished for laziness; but they were in need of potassium chloride, sometimes temporarily, at other times permanently. The tentative diagnosis would be confirmed by appropriate therapy. Referring to obscure attacks of colicky abdominal pain, in which the clinician was obliged to fall back on the appendix, Dr. Southby said that he believed that there was a condition of recurring appendiceal colic in children quite apart from true appendicitis. Often the mechanical basis of the attacks was gratifyingly revealed at operation. Drug idiosyncrasies also presented problems, and the recognized sedatives might be associated with increased tension or even with a rash or other skin lesion. The child who was difficult to feed, the hyperkinetic child, in Dr. Southby's opinion was the product of the difficult modern times. The child was healthy, but usually had an intense aversion to food. He generally required a complete change of environment or the care of a trained children's nurse. Adequate confirmation of the provisional diagnosis would be forthcoming from the response to the type of management recommended.

The Relationship of Child Psychiatry to Pædiatric Practice.

DR. GUY SPRINGTHORPE (Melbourne) read a paper on the relationship of child psychiatry to pædiatric practice. He set out to answer two questions: (*a*) Is a knowledge of child psychology and psychiatry of value in pædiatric practice? (*b*) How can this knowledge and experience best be obtained? In regard to the first question he asked what were the types of conditions which came under the care of pædiatricians? The cases might be classified under two main headings—those in which the complaint was largely or wholly psychological, and those in which there was a combination of the physical and mental. In considering the first group, Dr. Springthorpe had looked through the notes of the last one hundred children in this category whom he had seen in his practice. Their ages ranged from infancy to seventeen years. He divided the complaints into four subdivisions: (i) Those within the range of normal variations comprising parental anxiety over some alleged problem, and developmental difficulty in the child *plus* parental anxiety. (ii) Anxiety reactions, including behaviour problems and personality disorders. (iii) Mental retardation, and here two groups were included—a general group and one comprising specific intellectual disabilities. (iv) Psychosis, including schizophrenia of manic and depressive types. In stating this classification, Dr. Springthorpe remarked that no classification was entirely satisfactory. The second of the two main headings was the combination of physical and mental symptoms. With this group pædiatricians were familiar. The physical aspects were so striking that the psychological side might be overlooked. Among the more common of these disorders were asthma, epilepsy, the post-encephalitic syndrome, spasticity, after-effects of head injury, migraine, chorea, the neuro-dermatoses, obesity, endocrine disorders, some digestive and feeding upsets, enuresis and defects of sight and hearing. Dr. Springthorpe referred to some principles in treatment and remarked in regard to the second main group, in which physical and mental symptoms were combined, that although the conditions might be only half psychological, they did not need only half as much psychological knowledge for their treatment. In fact the psychological aspect was sometimes more difficult to elucidate and control than in many of the cases in which no somatic symptoms were present.

In regard to the second main question of how knowledge of child psychiatry and experience could best be obtained, Dr. Springthorpe referred to the scarcity of psychiatrists. Improvements in teaching were needed at both the undergraduate and the post-graduate levels. The curriculum was seriously unbalanced; it could be improved if there was a desire to improve it. He thought that with the formation of the Pædiatric Association and the establishment of a chair in child hygiene at the University of Sydney teaching might be improved.

DR. R. T. BINNS (Adelaide) said that child psychiatry and pædiatrics overlapped considerably. The emotional state of the child could be seen and felt even during the interview with the parents at the examination of the child; fear, anger, rage, restlessness, temper-tantrums and various other disorders of behaviour were indicative of the disorder of the child's mind. Dr. Binns thought that it was the emotional rather than the material environment to which the child was sensitive—situations such as discord in the home, separation of parents, loss of the parents by death and suspicious or paranoic behaviour of the parents, a minor degree of which might be presented by a person who was "hard to get on with". Such things affected the child's peace of mind and were reflected in the child's health. Similarly at school, there were baneful influences such as difficulties in relationship with teachers and fellow pupils, mental backwardness making learning itself difficult, or normal mentality faced with bad teaching. It was advisable to get an assessment of the degree of disturbance after obtaining further information, such as that resulting from visits to the home by a psychiatric social worker or even by an ordinary medical social worker. As the degree of backwardness was ascertained, appropriate modifications of the environment should be

made to suit the extent of the backwardness. Dr. Binns also referred to another group consisting of those who had had brain lesions, such as might result from a head injury. He said that when the physical effect had gone the child was apt to be nervous and to manifest memory defects, inattention at school, behaviour disorders and other types of abnormal emotional instability; such children needed careful psychological handling. Dr. Binns also mentioned the aftermath of chorea, with general emotional lack of control and deterioration in behaviour, which could be avoided after recovery if the psychological situation was treated; recovery might be complete. Dr. Binns then briefly referred to some points in the differential diagnosis between minor epilepsy and hysteria; sometimes there was no loss of consciousness, but the attacks were alarming to the parents and guardians of the child. In conclusion, Dr. Binns said that it was sufficiently established that two specialties met on a common ground in considering those children, and that there was need for further research into the effects of mind disturbances on bodily health.

DR. FELIX ARDEN (Brisbane) endorsed what Dr. Springthorpe had said with special reference to small children. He said that the damage done at an early age might be made permanent by ignorant or faulty handling; in such cases they saw psychoneurotic adults being manufactured. The process was that parents helped children to evade issues and to escape consequences and allowed them to stay away from school because of stomach ache or other non-organic trivial complaints. A child's stomach ache might become a part of the child's personality and be very hard to eradicate. In conclusion, Dr. Arden asked whether Dr. Springthorpe agreed with him that most children with tics and habit spasms were the children of ambitious parents who pushed the child to the limit of his capacity, and that if the pressure was "laid off" the tic would probably disappear.

DR. VERNON COLLINS (Melbourne) said that Dr. Springthorpe had raised what was perhaps the number one problem in pædiatrics, and had indicated some degree of the enormity of the problem by mentioning that 10% of children were the victims of a psychiatric condition. He had also given them something to encourage them when he said that pædiatricians should be able to cure four out of five of the patients. The average newly-graduated doctor realized from the beginning that the problems existed, but he could not even speak the language familiar to kindergarteners and was consciously ill-equipped to assist the parents. Dr. Collins wondered how they were to train the medical students, as even some of the teachers in the teaching schools themselves required to be trained in that respect. It was necessary to try to create an atmosphere in which emotional disorders came up for consideration. Two measures immediately presented possibilities: they were the taking of better histories and improvement in the guidance of parents in out-patient department clinics during the teaching of students. Dr. Collins said that a fundamental fault occurred when a strange doctor took the medical history without any responsibility for the further care of the child. He believed that the resident medical officer from the ward should see the mother and take the history from her in the ward itself; he could then be encouraged to worry about eliciting the details on which the students would rely, and thus the desirable atmosphere would be created and the resident medical officer's senior could urge him to amplify the information from time to time. Dr. Collins asked Dr. Springthorpe to give his ideas upon training of the kind to which he had referred. Dr. Springthorpe had mentioned the value of the Lady Gowrie Child Centres, but Dr. Collins had been interested to read that in America it was considered that a doctor should spend six months working in a mental hospital before he commenced pædiatric training.

DR. T. H. R. MATHEWSON (Brisbane) said that he believed it to be important to start preventive psychiatry from the beginning; right after birth of the child clinicians should avoid the regimentation which was prevalent in the feeding and handling of the babies. Dr. Mathewson asked Dr. Springthorpe to define his attitude on the handling of thumb-sucking, which was commonly encountered in practice.

DR. J. BRODY (Queensland) said that Dr. Collins had shown the need for more intense training of pædiatricians in psychiatric matters; but he (Dr. Brody) was not sure that those outside the circle realized how big the problem really was: the child would grow up to be a maladjusted adult, and in turn would become the parent of another maladjusted child; a vicious circle thus had to be broken by the energetic treatment along modern lines of the children ascertained to be sufferers from mental ill-health. Dr. Brody then said that child delinquency was on the increase and the reason must be sought in the psyche of the child and in the home environment; the children were living against a background of insecurity, and that circumstance exaggerated the emotional difficulties that arose. He described the matter as urgent, and supported Dr. Springthorpe's advocacy of widespread grappling with the problem, at least as well as it was being dealt with in countries overseas.

DR. D. B. CHEEK (Adelaide) said that, in the light of his recent research work in pink disease, he had been inquiring into minor degrees of disturbance of the sodium metabolism manifested by children between the ages of two and seven years; those children had many nervous and emotional disturbances which found a place in the classification that Dr. Springhtorpe had made of the anxiety disorders. Dr. Cheek had already obtained evidence that by correction of the sodium metabolism those children became normal from the psychological point of view.

DR. ROBERT SOUTHBY (Melbourne), from the chair, before calling upon Dr. Springthorpe to reply, referred to the children known as "mongols", and asked Dr. Springthorpe to give an opinion on the highest limit of mental attainment in that condition. Dr. Southby related the case of a patient, aged sixteen years, who was a recognized mongol, but who had attained the standard of the normal Grade VI. Dr. Southby also asked Dr. Springthorpe whether he had noticed any impairment of mentality after severe chorea or severe purulent meningitis; he said that the patients usually seemed to recover satisfactorily, but he wondered whether Dr. Springthorpe had examined many children of the type long after their illnesses because of psychiatric problems. Dr. Southby also agreed with what Dr. Mathewson had said about the need for proper care from the earliest age. He said that nowadays children had to be protected from regimentation from the womb to the tomb.

DR. A. E. PATERSON (Brisbane) mentioned that he had a mongol patient who had advanced to the mental age of ten years and was a successful exhibitor of stock which he prepared for exhibition himself.

Dr. Springthorpe, in reply to Dr. Arden, who had mentioned the dangers of over-protection in the genesis of the neurotic attitude presented by many an "only child", said that the child being "pushed along" certainly acquired tics, but that the pushing was not necessarily along scholastic lines; any form of conflict could produce tics and spasms, and children would realize that those objectionable practices were powerful weapons with which to beat the parents. In reply to Dr. Collins, Dr. Springthorpe said that there were many good reports from all over the world about the methods of training adopted successfully, and that he had referred to some of them in the Beattie-Smith lectures not so long before; in brief, the answer was "better training", and that could be achieved if there was the will to achieve it. Dr. Springthorpe said in reply to Dr. Mathewson that he was not one of those who believed the theories concerning the occurrence of psychic trauma in the birth canal; the absence of any programme in the feeding of infants and young children had its devotees in America. Dr. Springthorpe considered that the type of mother to whom the directions for feeding were given should be considered before a decision was made about the nature of the feeding programme. He did not subscribe to the Freudian views on the relationship between thumb-sucking and sexuality; he thought that thumb-sucking might be related to hunger or to

irritation from teething, but that in excess it tended to pull the teeth forward. It usually passed off, especially if nothing was done to stop it. In reply to Dr. Brody, Dr. Springthorpe said that the problem would not be solved by increasing the number of beds in the mental hospitals; to paraphrase Scripture, the sins of the fathers were often visited on the children psychiatrically. Dr. Springthorpe went on to say that Dr. Cheek's contribution to the discussion showed that there was no distinction between the body and the mind; indeed, there might not be any mind really, but at all events body and mind were inseparable, and observations like those of Dr. Cheek showed how difficult it was to distinguish between the hen and the egg. In reply to Dr. Southby, Dr. Springthorpe said that he had not seen any mongols who had attained Grade VI standard. As they all knew, the average mongol reached a mental age of seven or eight years, but a higher range was occasionally reached, and he had been interested to hear of Dr. Southby's patient. Dr. Springthorpe had frequently noted that after severe chorea and the passing of the toxic state the patients seemed to have no organic defect or mental deterioration; the psychological factor depended entirely on how they were handled, but it should not jeopardize their mental health. Dr. Springthorpe finally said that when speaking to students he had been guilty of exaggerating the position in connexion with the feeding problem by saying that it did not matter so much what food was given to the baby as how the food was given to the baby. The matter under discussion was of great interest to himself and, he thought, to everybody.

The Use of Streptokinase in the Treatment of Tuberculous Meningitis.

DR. STANLEY WILLIAMS (Melbourne) presented a paper by himself and P. L. Bazeley on the use of streptokinase in the treatment of tuberculous meningitis. He explained that streptokinase was the fibrinolytic enzyme obtained from cultures of certain strains of hæmolytic streptococci. It could cause the liquefaction of fibrinous exudate *in vitro* and in the pleural cavity. Following the report by Cathie of its use in the treatment of tuberculous meningitis, streptokinase had been prepared at the Commonwealth Serum Laboratories. Dr. Williams said that the results of treatment with streptokinase given intrathecally, combined with streptomycin given intrathecally and intramuscularly were inconclusive. Of nine patients so treated, four had died and three had a chance of surviving with central nervous system disturbance. There was no toxic effect associated with the present batch of streptokinase when injected intrathecally. The liquefying enzymes of the streptococcus had been shown to be of value in the treatment of exudative accumulation in hæmothorax, in empyema and on surfaces of wounds of the limb. There was a distinct place for such an action in the treatment of tuberculous meningitis, and thus there were indications for further trial with streptokinase. Streptokinase should be combined with streptomycin, given by intrathecal and intramuscular injection, and with para-amino-salicylic acid given by mouth.

DR. STEPHEN WILLIAMS (Sydney) said that it was usual to find at autopsy that the adhesions present were firm, hard, fibrous bands, and that the hydrocephalus was the combination of the internal and external varieties; post-mortem examination did not suggest that there was any chance of dissolving the bands by means of a lytic substance. He asked Dr. Stanley Williams to describe the parallel autopsy findings after streptokinase had been used in the treatment. Dr. Stephen Williams went on to say that in Sydney they had also been supplied with some streptokinase by Mr. Bazeley, from the Commonwealth Serum Laboratories, in Melbourne, but they had been too nervous to try it because of the amount of toxicity associated with its use. He had used some of it in a case of neonatal meningitis due to the *Bacillus coli communis*, but the baby had died of hydrocephalus. Dr. Williams went on to say that after hearing all the details he felt that they would like to go on with the use of streptokinase in tuberculous meningitis; its function in treatment appeared to be to attempt to stop the fibrinous adhesions which would go on without it to become fibrous adhesions. There might be another approach to solve the problem of hydrocephalus as a complication, but it was certain that something of the kind was required to complete the cure of the patients.

DR. DOUGLAS GALBRAITH (Melbourne) expressed great interest in the subject, but said that he had had a limited experience of the treatment of meningitis in the acute phase. However, at the Frankston Orthopædic Branch of the Children's Hospital, Melbourne, to which the patients were often sent at a later stage, they had consistently found a great elevation of intrathecal pressure, which as a rule reached approximately 300 millimetres of water. He had reached the position in which he tentatively suggested the advisability of discarding intrathecal therapy altogether; reactions occurred to the introduction of the antibiotics, and by means of fluid obtained by ventricular puncture it could be established that there occurred a cellular reaction, blood staining at times, and an increase in protein content as well as the raised intrathecal pressure. If reliance was placed on the intramuscular injection of streptomycin, the dosage might have to be increased, but presumably that could be done with safety. To those who saw the amount of pain and suffering frequently minimized by anæsthetics administered every day for long periods to the same child, the desirability of abandoning intrathecal therapy was obvious. In conclusion Dr. Galbraith said that he wondered whether the ideas advanced by Hugh Cairns were being utilized thoroughly; it might be rational to put a catheter into the interpeduncular space through burr holes.

PROFESSOR LORIMER DODS (Sydney) mentioned the fact that he understood from letters recently received from England that the use of tuberculin as a means of producing lysis was being investigated at Oxford by Dr. Honor Smith, who had used intrathecal injections of purified protein derivative (P.P.D.) with that object. Dr. Honor Smith had shown that injection of P.P.D. into the theca of the patient who failed to react to the Mantoux test produced no increase in the protein content and very little increase in the cell content of the cerebro-spinal fluid, while similar injections given to patients who reacted to the Mantoux test resulted in an increase of protein content to the level of 500 milligrammes per 100 millilitres and a pleocytosis of up to 1500 cells per cubic millimetre. Professor Dods was informed that at present Dr. Honor Smith and her colleagues were using that form of therapy as a lytic agent much in the way that streptokinase was used in tuberculous meningitis.

DR. R. THOROLD GRANT (Adelaide) said that Adelaide was a small place and his experience of tuberculous meningitis was limited, in so far as the result of antibiotic therapy was concerned. He knew that two of his patients were dead and that another two were well more than two years after the cessation of treatment. Another had been undergoing almost continuous treatment since August, 1947, and had relapsed recently; they had stopped intrathecal medication, as he appeared to be responding to the intramuscular introduction of streptomycin; the miliary dissemination in the lung field had cleared and a heavy crop of chorioidal tubercles had changed substantially, but the unfortunate child had developed tuberculosis of the *os calcis* despite continuous therapy. Dr. Grant said that he had not used streptokinase or para-amino-salicylic acid; he asked for guidance from Dr. Williams concerning the details, and said that he would be grateful for any help that he could give.

DR. H. BOYD GRAHAM (Melbourne) raised the question of the desirability of obtaining some reaction after the intrathecal injection of biologically pure streptokinase. As Dr. Stanley Williams had said, an appreciable reaction had occurred with the preparation first supplied through the courtesy of Mr. Bazeley, which to a certain extent at all events was attributable to the presence of toxic material. However, the point was that amongst other things the rationale of the use of streptokinase was to hold fibrinous material in solution by lytic action, and success in that direction implied the entry into the circulation of proteolytic material which would reveal its presence by the

reaction. Therefore it would appear to be dangerous to use less than enough of the streptokinase to provoke a reaction which would not prejudice but benefit the patient's condition. Dr. Graham questioned the criticism of the effects of streptokinase if insufficient was used to produce the required effect.

DR. M. COCKBURN (Adelaide) said that the use of streptokinase was not entirely reserved for the solution of fibrinous exudate; Dr. Tillett and his fellow workers were interested in its use in the clearing up of exudates in serous membranes and joint cavities, and much less concerned with a condition such as that which they were discussing at the moment.

DR. ROBERT SOUTHBY (Melbourne) asked Dr. Stanley Williams to say whether any reliance was still being placed on chloride concentrations in the cerebro-spinal fluid in tuberculous meningitis, as it was probable that the estimations were multiplied considerably by the treatment which was now regarded as a routine procedure. In the meningitis from *Bacillus coli communis* in neonatal patients which had been mentioned, the stage reached in treatment and the results obtained by the present methods reminded him strongly of the position in respect of meningococcal meningitis a generation earlier; the sequelæ were similar and included deafness, blindness, spasticity and mental deterioration, but the lives were saved. Somewhat similar was the present state of the attack on tuberculous meningitis; something additional was required to combat the sequelæ after saving the lives or prolonging the illnesses. Some Americans had said that after the original withdrawals of cerebro-spinal fluid for diagnostic and occasional investigational purposes, streptomycin should be given by the intramuscular route only in influenzal meningitis, and presumably the same would apply to tuberculous meningitis soon.

Dr. Stanley Williams, in reply, said that it was unwise and dangerous in the state of present knowledge not to use streptomycin intrathecally both in tuberculous and in influenzal meningitis. The therapy was not dangerous to patients and the disease was dangerous to life; they should hit the disease hard with all they had; it was not the streptomycin or the streptokinase that killed. Dr. Williams said that they had used a daily dosage up to 100 milligrammes of streptomycin given intrathecally in a severe case, and the patient had not only recovered but had remained well for two years and was still living. Dr. Williams was pleased to hear that Dr. Cockburn had met Tillett and to know what the team was actively interested in at the present time. In reply to Dr. Grant, Dr. Williams said that streptokinase was certainly not good enough to penetrate thick adhesions and was unlikely to be helpful in the case that Dr. Grant had quoted; he strongly recommended that para-amino-salicylic acid should be combined with streptomycin. In reply to Dr. Stephen Williams, Dr. Stanley Williams said that he took the point that there should be less exudate at autopsy after the use of streptokinase, and that was so in one case but not in others in Dr. Williams's own experience; for those patients streptokinase had not been any good, as it did not reach the right spot. It was better that the kinase should penetrate the material in which the tubercle bacilli were imbedded rather than that the fibrinous material should not be deposited. Dr. Williams thanked Dr. Galbraith for his contribution about the elevation of the pressure of the cerebro-spinal fluid, which would appear to be a good guide to the development of obstruction; the surgeons were still reluctant to make the burr holes through which the tapping of the ventricles could be undertaken.

Leuchæmia in Childhood.

DR. J. H. COLEBATCH and DR. A. L. WILLIAMS (Melbourne) presented a paper entitled "Should We Treat Leuchæmia in Children?" The paper was based on an investigation into the effects of "Aminopterin" in leuchæmia, carried out at the Children's Hospital, Melbourne, in which a strenuous attempt was made to establish proper controls and to avoid any bias in the selection of cases. Of 26 children suffering from leuchæmia, 18 were treated with "Aminopterin" and eight were treated as controls. For several reasons it was found impossible to adhere rigidly to the original plan of selection; but at no time was the selection of patients for "Aminopterin" treatment made on clinical grounds. The authors described in detail the supportive measures used and the method of administration of "Aminopterin". The assessment of the results of treatment was based on three factors: (i) improvement in the clinical condition with remission of symptoms, (ii) improvement in the peripheral blood picture and in the bone marrow findings and (iii) the duration of life. In the series under discussion, clinical remissions occurred in the great majority of cases in the "Aminopterin"-treated group and in three cases of the control series. Hæmatological improvement occurred in all cases, but was of greater degree and duration in the "Aminopterin"-treated group. The average period of survival in the "Aminopterin"-treated series (twenty-one weeks) was longer than in the control series (10·4 weeks). The authors discussed the problem of whether or not to treat children suffering from leuchæmia. They pointed out that the outlook for such children was changing, and urged that the decision to treat or not to treat the child suffering from leuchæmia should be made by the parents after they had been fully acquainted with the facts.

PROFESSOR LORIMER DODS (Sydney), in opening the discussion, said that his appreciation of Dr. Colebatch's knowledge of pædiatric hæmatology had begun nearly five years earlier, when Dr. Colebatch had attended a post-graduate course in pædiatrics at the Royal Alexandra Hospital for Children, Sydney. During the years that intervened Professor Dods had sought Dr. Colebatch's opinion in consultation about hæmatological problems on several occasions and had been most impressed by the sound answers which he had received. Professor Dods went on to say that he and Dr. Colebatch had received their supplies of anti-folic acid substances originally at about the same time and had used them in treatment simultaneously; but unfortunately the results which he had achieved had been miserably poor when compared with those presented by Dr. Colebatch. As Dr. Colebatch had pointed out, there were glimmers of hope of new and better preparations on the horizon, and Professor Dods felt sure that he could include amongst those glimmers the gluco-corticoids which had recently been credited with some degree of success in the treatment of the disease. The interview with the parents represented one of the most distressing episodes in pædiatric practice; frequently the parents had not suspected the presence of such a dire and baneful disease as leuchæmia.

DR. MALCOLM COCKBURN (Adelaide) said that during his visit to the United States of America in the latter part of 1948 he had worked daily for two months with Faber and others in the leuchæmic clinic. He had returned in February, 1949, armed with some "Aminopterin", but had used it first in October, 1949, and only twice since; in the case of two of the patients, remissions occurred and life was prolonged by perhaps three months, but it was too early to express any opinion about the third, as treatment had just commenced. He believed that treatment was worth while and stressed the importance of the management of the parents, who would probably know from the lay Press that certain therapy might be helpful. He illustrated the difficulty by describing circumstances surrounding a boy, aged eleven years, who was an only child and suffered from leuchæmia. The parents felt that they must do something, and hearing that "ACTH" had been given the credit of cure three times in New York, wanted to fly to America for the treatment. Dr. Cockburn had spoken on the telephone to a professor in San Francisco with whom he was in contact, and on his advice the parents were satisfied to receive for their son "Aminopterin" treatment in Adelaide. The patient had had a remission, and it was likely that without the treatment that would not have been the case. Dr. Cockburn stated that the treatment at Faber's clinic was free and the parents must be willing to cooperate; he believed that only one child had been withdrawn from the clinic at the request of the parents.

DR. JOHN A. MCLEAN (Melbourne) congratulated Dr. Colebatch on having included a control series of patients in his research work; that morning Dr. McLean himself had been adversely criticized for omitting controls in the work which was the subject of his report at congress. He went on to say that during the past two years he had used "Aminopterin" in the treatment of 22 patients suffering from leuchæmia, ten of whom were children; in five instances the children had had complete remissions, but only partial remission had been obtained in the case of half the number of adults. On the basis of that experience, Dr. McLean was prepared to agree that it was worth while to use "Aminopterin" or similar therapy for children, with the proviso that the toxic nature of the drug used and the experimental status of the treatment should be carefully explained to the parents; in the case of adults, he felt disposed to refuse the treatment at present.

DR. FELIX ARDEN (Brisbane) said that he had come to learn and had learned a great deal, but he wished to ask a question; he wondered whether the toxicity of the drug made the children unhappy, although the duration of the disease was in round figures doubled.

DR. STANLEY WILLIAMS (Melbourne) lodged an objection to the suggestion that had been made that the onus of the decision to have the child treated should be placed on the parents; he thought it the duty of the doctor to discuss the matter with the parents and to expect them to rely on his advice.

DR. NOEL GUTTERIDGE (Brisbane) asked whether Dr. Colebatch had had any experience of the way in which intravenous injections of toluidine blue controlled the hæmorrhage in purpura, and whether he had considered using that dye for a similar purpose in leuchæmia. With reference to "high protein" feeding, Dr. Gutteridge said that daily estimations of the plasma protein levels revealed a progressive fall of the level in leuchæmia, and with urethane therapy in adults the fall was enormous.

DR. ROBERT SOUTHBY (Melbourne) said that the giving of transfusions of blood formed a practical problem, as they had to be large and oft-repeated to be efficacious. In Victoria, the Red Cross Blood Transfusion Service supplied the blood and had complained about the futility of using such a lot for the purpose, but had been pacified by the usual practice adopted of informing the parents of their obligation to find donors to give back to the blood bank at least as much blood as had been taken out of it. Dr. Southby expressed his agreement with what Dr. Stanley Williams had said about placing the responsibility on the doctor rather than on the parents, and thought that the doctor, in making the decision, should be guided by his honest opinion as to what he would do if the patient was his own child. There was a prospect of giving the child a few weeks or months of more comfortable existence, and the child suffered less rather than more in the period. Dr. Southby asked whether Dr. Colebatch thought there was an infective element in leuchæmia, as he had been informed by a colleague who practised in an isolated country district that within the space of six or seven years eleven cases of leuchæmia had occurred in a small but unrelated population.

Dr. Colebatch, in reply to Dr. Southby, said that it was not known whether there was an infective factor, but some infection was frequently present at the onset and could conceivably start the process. Dr. Colebatch knew that Dr. McLean favoured a neoplastic theory. In reply to Dr. Gutteridge, Dr. Colebatch said that he had had no experience of the intravenous use of toluidine blue, but the plasma protein level came up to normal during the remissions while the patients were having the usual "high protein" dietary used in routine fashion. He wished that he could do better with his patients in respect of the bone marrow remissions; Dr. McLean had been able to produce superior bone marrow responses in his series. Dr. Colebatch then said that he had used "Aminopterin" in high dosage and reduced the amount during maintenance, whereas the custom in the Boston clinic of Faber was to reverse that policy. When the research work had commenced Dr. Colebatch had been ignorant of the required dosage to obtain remission, and in some of the earlier cases he had used too much or too little; but latterly the toxic effect had been much less frequent and much milder. The "Aminopterin" tablets were easy to take and certainly did not make the child unhappy; the treatment was continued throughout the whole course of the disease including the remissions. During the remissions, he had not insisted on any restrictions of food or activity within the limitations of the child's state. He considered that it was essential to give the parent or relative an honest prognosis and to discuss the advisability of treatment with him. In the series which formed the basis for his report that day, all the parents had been consulted and the treatment had not been refused by any of them. In conclusion, Dr. Colebatch said that the work in connexion with the leuchæmic patients had been perhaps the most useful he had ever done during the course of pædiatrics he had taken at the Royal Alexandra Hospital for Children, Sydney.

Corpulence and Obesity in Childhood and Adolescence.

DR. H. BOYD GRAHAM (Melbourne) read a paper on corpulence and obesity in childhood and adolescence. He said that in a previous paper in 1947 he had presented a discussion of constitutional and ætiological aspects of corpulence and the rationale of psychotherapy, dietetic control, physical activities and adequate oral thyreoid therapy as a regimen for its amelioration. Mensuration and record-keeping were described and a normogram for ready-reckoning was provided. The present paper was a progress report on the private clinical research project and, as repetition had been avoided, it should be regarded as a continuation of the previous paper.

Dr. Graham described an improved system of assessment of corpulence, involving the use of specially constructed charts for rapid estimation of standard weight for height at age which, when compared with actual weight at that height and age, provided the basis for a purer index of corpulence called the weight-height-age index. He placed emphasis on psychotherapeutic measures in considerable detail and in relation to the special problems of each four-year age group from birth to twenty years of age. He likened the role of thyroxine, of the amphetamines, of gonadotrophic medication and other drug store supplies to the temporary, though greatly appreciated, use of crutches; and the objective was to reach the happy stage when they could be discarded. He mooted certain indications of a preventive nature and supported by argument and clinical evidence the need for thorough treatment by competent doctors and prolonged supervision to prevent recidivation. He described in detail personal procedure, method and record-keeping, based on widening experience, as an example from which others who could might build techniques for providing a more efficient medical service for those who needed it. Overweight was far too common; and the unchecked sequelæ amounted to a major human catastrophe which was a reproach to the medical profession.

PROFESSOR LORIMER DODS (Sydney), in opening the discussion, said that Dr. Boyd Graham had described the ætiology of obesity of varying degrees with a wide spectrum, and had emphasized the psychological factors and stressed the need for an approach along psychological lines as well as for treatment likely to produce an improvement in the appearance of the patients. Professor Dods did not think that it was wise to recommend the administration of thyreoid in general to obese children, though of course Dr. Boyd Graham had the knowledge and experience required to select suitable patients and to protect them from any harmful effects by careful supervision and reexamination.

DR. N. CUNNINGHAM (Sydney) said that he was frightened of thyreoid in obesity and had not used more than *Thyroideum Siccum*, one grain per day, as his dosage. He asked whether Dr. Graham had included controls in the series. He had noted from the case summaries shown by Dr. Boyd Graham that one of the patients had lost approximately three stone in weight in three months; Dr. Cunningham preferred to bring the weight down over the

years much more slowly. He asked Dr. Boyd Graham to explain the thyreoid medication more fully.

DR. ARNOLD ROBERTSON (Sydney) said that in his outpatient clinic at the Royal Alexandra Hospital for Children he had undertaken the treatment of a number of the type of children under discussion. There were two points in particular which he wished to take up with Dr. Graham. Dr. Robertson said that he had established that his patients did not suffer from thyreoid deficiency, and thus doubted the rationality of general thyreoid therapy, especially in the large doses described by Dr. Graham. Eight of his own patients had been referred by well trained doctors as presenting the Fröhlich syndrome, but on investigation no proof could be obtained of enlargement of the pituitary gland. It seemed to him to be a fantastic diagnosis and was a bad one to make on psychological grounds. Dr. Robertson agreed heartily with Dr. Graham's advocacy of the psychological approach in the conduct of the treatment; it needed great concentration and enthusiasm, but he had every reason to believe that Dr. Graham possessed those qualities. With reference to sexual infantilism, Dr. Robertson said that from a clinical point of view he frequently experienced difficulty in forming an opinion, and he had the impression that the position was frequently overstated. He described how he examined the genitalia with the assistance of someone who exerted pressure to hold back the surplus fat, and thus he was able to state that the normal anatomical structure was overburdened with the redundant tissues.

DR. MICHAEL KELLY (Melbourne) expressed great interest in the subject, of which he had had experience only with adults, whom he treated by dietetic methods. He agreed with the previous speakers that it was better if possible to avoid thyreoid therapy.

DR. GUY SPRINGTHORPE (Melbourne) said that Dr. Graham had made a valuable discovery of which they should avail themselves. Whether every detail was correct was, of course, open to doubt; but Dr. Graham had demonstrated to them his obvious appreciation of the importance of psychological treatment. However, that form of treatment was not so simple for most doctors to apply as it appeared to have been in Dr. Graham's case. Nevertheless, Dr. Springthorpe agreed with Dr. Graham that the family pædiatrician and general practitioner must be trained to handle the psychological side of the great majority of the problems in practice; the pædiatricians would be suitably equipped, he hoped, in the near future.

DR. S. G. BRADFIELD (Sydney) asked Dr. Graham whether he had encountered any toxic manifestations arising from the thyreoid therapy in the dosage mentioned by him.

DR. ROBERT SOUTHBY (Melbourne), from the chair, said that he doubted whether similar results could have been brought about by dietary restrictions alone. The rapidity of loss of weight had to be watched carefully; but in his experience the initial loss was rapid compared with the subsequent rate of weight loss after stabilization had occurred. Dr. Robertson had drawn their attention to the necessity for criteria of the actual indications of the subthyreoid state. The matter of sexual immaturity was of importance to the parents, and the doctor's opinion was often asked with gravity and anxiety while the child was very young and immature. Dr. Southby did not use sex-stimulating injections of substances like "Antuitrin-S" until the children were aged over ten or eleven years at the earliest. Dr. Southby then referred in some detail to the published data of Dr. Alan McCutcheon of Melbourne on the frequency of delayed descent of the testes among otherwise normal schoolboys, which was analogous to the moral in the tale about Bo-Beep's sheep. Dr. Southby finally mentioned that mastiffs would not produce poodles; the family factor of size had to be taken into account as a problem in obesity.

Dr. Boyd Graham, in reply, said that, realizing the variable potency of the available thyreoid preparations, he had used throughout the series the tablet manufactured by the Commonwealth Serum Laboratories in Melbourne and described by the makers as "Thyroid, Fresh Gland, gr. 5 (dry gland, gr. 1½)", now known in terms of dry gland, 1·5 grains. He was a fact-finder and had not presented any theories to account for the facts. The children had taken large numbers of the tablets daily for months and even years and had derived nothing but benefit from them. The control series was in the case histories of the patients he had treated before he had realized the value of large dosage, and controls would also be found in large numbers in the records of his colleagues. He hoped that someone with access to a suitable laboratory would undertake to explain the behaviour of the patients receiving heavy thyreoid medication. He drew the attention of those interested to the report of De Robertis, which came from Cambridge, Massachusetts, the city where Bessie, the super-computer, had been constructed and operated. The report was published in *The Journal of Clinical Endocrinology* for November, 1948, and dealt with an extremely complex cytological procedure by means of which the amount of thyreotropic hormone (TSH) in human blood could be estimated in Junkman-Schoelter units, the normal being in the range of 0·0025 to 0·005 unit. By means of that procedure De Robertis had demonstrated that there were two different kinds of hyperthyreoidism and two different kinds of hypothyreoidism, according to the presence of an excess or a deficiency of thyreoid and "TSH" respectively. Dr. Graham said that Dr. K. Douglas Fairley had recently directed his attention to that article; it might be a clue to the explanation of the tolerance to the large dosage of thyreoid shown by the corpulent children and the benefit they derived from it, or on the other hand it might be quite irrelevant. Dr. Graham agreed heartily with Dr. Robertson that the corpulence was rarely an accompaniment of subthyreoidism of the clinical variety. He was also certain that cretinoid or clinically subthyreoid children should not receive and would not tolerate nearly the amount of thyreoid given by mouth that was accepted with benefit and without toxic manifestations by the corpulent children. He also commented on the analogous situation with respect to the adrenal gland, to which reference had been made by a member of the panel at the plenary session two days earlier. With reference to the rate of weight loss, Dr. Graham said that he had saved time for the patients as he gained experience; the tissues of the child allowed of more rapid loss than did those of adults. In the case quoted by Dr. Cunningham, well-grown as the child was, the obesity was so gross that, after due allowance for over-growth, the child's weight was double the expected weight when treatment began, and the amount of weight lost was really but a drop in the ocean. In conclusion, Dr. Graham said that he agreed with Dr. Robertson's condemnation of the continued reference to Fröhlich. True Fröhlich's syndrome was rarely encountered and had nothing to do with the matter under discussion. He asked his colleagues to read the full paper when it was published as he believed that he had offered them something which, if applied, would give them great satisfaction and their patients great relief.

The Surgery of Congenital Deformities.

DR. T. Y. NELSON (Sydney) read a paper on the surgery of congenital deformities, based on the deformities seen over a period of twelve months at the Women's Hospital, Sydney; 188 deformities were observed in about 6000 births. Dr. Nelson then commented briefly on the abnormalities and their treatment. He said that the minor orthopædic deformities formed the largest group. Of the three types of talipes (*talipes calcaneo-varus, metatarsus varus* and *talipes equino-varus*), only a small proportion of those with the second and third types required prolonged treatment; but suitable treatment in the early stages of *talipes calcaneo-varus*, which was more resistant to treatment, would prevent much troublesome flat foot in later life. Hernia into the umbilical cord was a surgical emergency, and the defect varied in degree. Often when associated defects were present the condition was not amenable to treatment. If it was impossible to close the defect completely when the abdominal cavity was insufficiently developed to accommodate the viscera, Gross's manœuvre of leaving the peritoneum and muscles open and closing only the skin and fat might be life-saving. With regard

to œsophageal atresia and tracheo-bronchial fistula, Dr. Nelson said that there was considerable difficulty in the early diagnosis, which was of the utmost importance if operation was to be successful. Duodenal obstruction was another surgical emergency, and during the period under review two patients had been successfully treated at the hospital. Dr. Nelson described one case to illustrate the difficulties encountered; at operation under local anæsthesia preceded by rectal injection of "Pentothal", the dilated duodenum was anastomosed to the collapsed jejunum. The outstanding symptom of the condition was vomiting, as it was also in small-bowel atresia. In both conditions Farber's test for the presence of cornified cells should be of value in the diagnosis, though laparotomy would usually be indicated. In the one successful case at the hospital a side-to-side anastomosis was made for complete atresia of the lower portion of the ileum; but the child required a further laparotomy for obstruction, and recovered again with the aid of penicillin. With regard to Hirschsprung's disease, Dr. Nelson said it was of the greatest importance to recognize its presence in the neonatal period. Surgical treatment by caecostomy with or without colostomy was required early. Referring to diaphragmatic hernia, Dr. Nelson said that it might produce symptoms from birth and might be fatal in the first few days of life without being diagnosed. If the infant survived he might suffer from attacks of cyanosis, dyspnœa and vomiting. A plain X-ray film would usually give enough information for a diagnosis to be made; but a barium meal examination should be avoided owing to the risk of vomiting and aspiration pneumonia. Early operation was indicated, and Dr. Nelson believed that the best approach was by a thoraco-abdominal incision, with controlled respiration and the use of curare. With regard to craniostenosis, Dr. Nelson said that the most important associated defect was mental retardation; it was frequently present as a coincidental finding, and not as a result of the restricting effect on brain growth of the prematurely closed skull. There was a sufficiently large group of patients with apparently normal mentality to make the operation well worth while. The best results were obtained in the first year. Referring to distension of the subarachnoid space, Dr. Nelson said that although it was not exactly a congenital deformity, it might give rise to conditions which in the past had been diagnosed as congenital deformities. He then discussed the pathology of hydrocephalus in relation to distension of the subarachnoid space, and referred to a group of cases characterized by benign enlargement of the head and a characteristic picture produced by air studies. Increased intracranial pressure was shown by slow, moderate enlargement of the head, separation of sutures and bulging of the fontanelle with overfilling of the scalp veins. Rigidity of the limbs, twitchings or convulsions might occur, and in the encephalogram the subarachnoid space was seen to be distended. The hydrocephalus was never extreme, but the constant pressure produced cortical atrophy with mental retardation and neurological defects. Dr. Nelson believed that early treatment might produce better results and prevent some of the pressure effects that had occurred in the past. Finally, Dr. Nelson referred to porencephalic cysts causing hydrocephalus; the cysts were thought to be the late result of vascular thrombosis with subsequent degeneration of the involved area. Dr. Nelson briefly described two cases of the condition, in one of which the patient at the age of two years was symptom-free, and in the other of which the child had died after operation.

DR. DOUGLAS MACKAY (Adelaide) said that the condition under discussion was one of great interest to pædiatricians. The time had been too short for Dr. Nelson to discuss more than the commonest of the deformities classified among 1000 consecutive examples of congenital deformities. Those lower on the list not covered by Dr. Nelson included many of interest to them all. In a general way it could be said that nowadays there were practically no children who were too young or too frail for operative treatment; anæsthesia had become one of the least of the risks. If an X-ray plant was available it was possible to do practically all that was required for the investigation of abdominal pain, though it might be actually harmful and was usually unnecessary to use contrast materials such as barium preparations; however, lipiodol was useful for outlining the upper portions of the alimentary tract. If an abnormality was found by the third day of life, it was usually early enough to obtain good results from appropriate surgical treatment.

With reference to congenital anomalies of the feet, Dr. Mackay said that there was no doubt that everybody should know that the surgeon should examine the feet as quickly as possible; it was almost possible to have the feet in a state in which they looked normal by the time the mother was ready to leave the midwifery hospital. Dr. Mackay was not keen on the use of a plaster cast, which, if it was used, should be split, as the feet grew fast; manipulation and strapping usually sufficed. He was surprised to hear from Dr. Nelson that one such deformity was considered to be corrected in three months; a prolonged follow-up was always required. Speaking of overriding toes, which comprised 15 of the 1000 anomalies, Dr. Mackay said that it was a waste of time to treat them; when the baby walked improvement often occurred, and when it was required an arthrodesing operation was available at a later age. On the subject of congenital hydrocele, he said that doctors were still apt to attempt aspiration and to find that the hydrocele filled almost immediately; the fluid removed was from the peritoneum and entered the hydrocele through patency of the funiculus. The hydrocele did not require attention in the neonatal period, and when operation was necessary the tunica should be left alone; mere inversion of it cured the condition, and the futility of aspirating congenital hydroceles should be remembered. Early operation was sound practice when one was faced with severe varieties of *spina bifida*, though the likelihood of obtaining a satisfactory final result was extremely remote; the surgeon should attempt to make the baby look more nearly normal, to facilitate handling and to spare the mother from the horror of the appearance of the original condition; at all events no harm was done by operating.

Dr. Mackay said that among the neonatal genital defects, Dr. Nelson had listed *atresia vulvæ* and undescended testes; the former condition was readily treated by splitting the labiæ in the mid-line, though it was amazing how frequently the condition remained uncorrected even into adult life and caused a great deal of unnecessary anxiety and inconvenience. Dr. Southby had quoted the conclusions of Dr. Alan McCutcheon to them that morning; Dr. Mackay had heard the original presentation of the evidence and opinions. In twenty years of practice he had conducted a careful investigation in the light of what he had learned from Dr. McCutcheon, and he was able now to say that the condition was really comparatively rare and was not nearly so common as was indicated by Dr. McCutcheon. It was the retractile testis that occurred commonly, as could be established by precise technique of physical examination. The impression that time cured undescended testis was erroneous; the really undescended testes should be identified and the boy should be given hormone therapy to help; many such testes were incarcerated and had o be released surgically.

DR. KATE CAMPBELL (Melbourne) said that in the treatment of craniostenosis modern surgery had given them hope when they were quite hopeless. Aseptic meningitis was encountered in midwifery nurseries and seemed to correspond with the condition described by the Americans as albuminous meningitis. If lumbar puncture was performed at an early stage, the cerebro-spinal fluid was blood-stained, but as time went on it gradually became yellowish and later was highly albuminous with a pronounced mononucleosis. Concomitant cerebral anoxia caused localized atrophy of the brain, which should be visualized as well as the hæmorrhagic features of the clinical picture. Dr. Campbell said that repeated performance of lumbar puncture from the beginning minimized the risks and the morbidity; it had been advocated by Dr. E. Graeme Robertson and had proved to be a great success.

Dr. Campbell went on to say that Dr. Russell Howard placed emphasis on the importance of early diagnosis of œsophageal atresia and liked to operate before the baby

received the first feeding; the *liquor amnii* tended to collect in the upper blocked portion of the œsophagus and could not be swallowed, and mucus in abundance was also present there. She went on to say that the passage of the catheter after birth to ascertain the presence of liquor and mucus could trap the doctor; the catheter was apt to curl up in the blind end and not to go through to the stomach. It was necessary to make sure that the tube entered the stomach or did not do so, and assistance could be obtained by the use of lipiodol in the radiological department. Dr. Campbell asked Dr. Nelson whether he had any method of discriminating in neonates between neuro-muscular incoordination and true stenosis. In conclusion, Dr. Campbell reported the successful repair of diaphragmatic hernia at the age of seventeen hours, and said that the location of the apex beat over in the right axilla had been the most helpful sign leading to the correct diagnosis and treatment.

DR. FELIX ARDEN (Brisbane) said that he had specially appreciated Dr. Nelson's commentary on hydrocephalus arising from faulty absorption of cerebro-spinal fluid. After ineffectual treatment with phenobarbital, he had sent a patient to Dr. Nelson, who made the diagnosis; by repeated performance of lumbar puncture a notable improvement was obtained in the mental state and a reduction in the occurrence of fits. Referring to congenital obstruction of the bowel, Dr. Arden said that it was worthless to rely on the statements of the nurse that the patient had had a normal bowel action; the baby might have passed something, but without any fæcal material. The alleged motion should be examined by the doctor and the quantity and quality of its contents noted; thus the loss of precious time was avoided. Dr. Arden then said that he did not know of a worse tragedy than the recovery of a baby born with severe *spina bifida*, but left with paralysis below the waist and intractable incontinence of urine and fæces; they should be allowed to die and without operation.

DR. K. FRASER (Brisbane) said that Dr. Nelson had found classical subarachnoid hæmorrhage in a child with suspected arrest of hydrocephalus; the head wound would have been smaller had lumbar puncture been performed repeatedly. Dr. Fraser then said that when the duodenum was stenosed the third or fourth part was affected, but in atresia the virtual obstruction was in the lower part of the ileum. If the anomaly was duodenal, the classical radiographic appearances after two or three days resembled the shadow of an hour-glass distension with gas occurring above and below a segmental constriction. As was the case during a search for a bobby-pin, the constricted portion of the duodenum was difficult to expose surgically. That did not matter particularly, because an anastomosis had to be performed in any case, duodeno-jejunostomy and not gastro-jejunostomy being the operation of choice, though the latter was easier technically. With reference to meningoceles and meningo-myeloceles, Dr. Fraser said that he preferred early operation if he decided that the condition was operable; in the face of patulous anus and immobile legs, he refused to operate unless and until after a few weeks the skin over the affected part was normal. In discussing imperfectly descended testes, Dr. Fraser distinguished sharply between cryptorchidism with long mesorchium, which delayed the descent, and ectopic testes, which were not very uncommon; ectopic testes were physically bound down in the abnormal position, and hormone therapy was obviously ineffectual. Dr. Fraser, in conclusion, said that doctors were rather casual in the examination of newborn babies; he had had patients whose parents had consulted him several weeks or many months after the birth of the baby because things like cleft palate or undescended testes had just been discovered. He quoted a case in which a baby at the age of ten weeks had a gangrenous loop of bowel in a hernial sac, and the mother did not even know that the baby had undescended testes.

DR. H. BOYD GRAHAM (Melbourne) mentioned the eternal vigilance that was necessary to prevent the failure to discover the presence of congenital dislocation at the hip joint. Many doctors were examining young babies repeatedly and advising on management and feeding, and it was humiliating for the discovery to be made after the first anniversary of the baby's birth.

DR. E. S. STUCKEY (Sydney) said that a testis was not ectopic if it could be pulled down into the scrotum; if the testis was missing on one side by the age of seven years, for example, it was ectopic, and it was unlikely to come down without surgical assistance. Dr. Stuckey frequently came across examples of atresia of the labia in the out-patient department, usually labelled "imperforate hymen"; the *labia majora* were fused, and it was simple to separate them. The time of election for operation on congenital hernia was debatable, and it was his practice to postpone operation until the baby was a little over a year old, unless incarceration of bowel loops frequently recurred. In his opinion a sterno-mastoid tumour usually responded to manipulative treatment, which made operative interference unnecessary. He went on to say that it was not an advantage to wait even until the baby was three days old before relieving atresia of the bowel, and that the manœuvre of distending the collapsed lower segment with saline solution gave more material for the anastomosis; he usually had to be content with a single-layer operation.

DR. H. DOUGLAS STEPHENS (Melbourne) said that Dr. Stuckey had referred to the controversy on when to operate in inguinal hernia. Dr. Stephens preferred to wait until the baby was aged at least six months, and even if the hernia was single, he used a partly-fitting double truss until he undertook operative repair after the child had gained a dependable control of micturition. Dr. Stephens said that he could not recall an instance of strangulation and obstruction associated with undescended testis. The diagnosis of ectopia of the testis might have to be deferred several times; it made a difference if the examination was conducted in summer in contrast to winter. He had noted that Dr. Stuckey thought that the older subject had to be submitted to operation; it was his (Dr. Stephens's) practice to wait until the child was aged five or six years, and then to inject 10 millilitres of "Antuitrin-S Fort" twice a week for several weeks, though he had to admit that the patients did not often derive apparent benefit. He instructed the boy patient in the art of applying strong pressure at the right point and in the right direction to assist the descent of the testes, and if the course of injections was repeated at intervals, the desired result was usually obtained ultimately without operation. Dr. Stephens agreed that the relief of *atresia vulvæ* was a simple procedure; he simply separated the labia and put in a "Vaseline" plug, which was renewed frequently for three weeks. The trouble was that the labia were apt to reunite. He had come to the conclusion that soiling with urine caused irritation of the opposed surfaces, and with the deposition of salts from the urine the relatively denuded surfaces stuck together; it was advisable to issue a warning to induce hygienic management and intermittent use of a "Vaseline" plug. Dr. Stephens said that he had operated on a number of the babies described by Dr. Arden as being better dead. He quoted the case of a child still living upon whom he had operated five years earlier. The baby had had an extensive meningo-myelocele with patulous anus and no control. Anæsthesia was present below the hip on one side and below the mid-thigh on the other, and she had had paralytic bilateral talipes. Hydrocephalus was the great complication; but the child was highly intelligent and precocious, and the parents were constantly at work on her and had taught her to walk around in calipers without assistance; she was in good condition above the waist, but was still incontinent of urine. Discussing deformities of the feet, Dr. Stephens said that most of the patients did well if the feet were moulded during the first two weeks; he had swollen joints on his hands from the manipulations, which had to be forcible enough to obtain an over-corrected position, and it was advisable in the early stages to obtain assistance from the relaxation of general anæsthesia. He added that the commonest and worst variety was *talipes equino-varus*, and that he preferred moulded dorsal and ventral aluminium splints to plaster. He used adhesive strapping for ordinary club

feet. The secret was to cut it into strips half an inch wide and to attach two strips only during the actual manipulation; an assistant applied a supplementary strip each day for five days, when all the strapping was peeled off and the foot and leg were bathed before another manipulation. The process was repeated every ten days, and later every two weeks, until it was judged that orthopædic boots could be worn; the surgeon should not lose sight of the patients until long after they had commenced to walk.

DR. ROBERT SOUTHBY described the filling of the stomach with air in tracheo-œsophageal fistula, together with dyspnœa, vomiting and cyanosis, which could be picked by a discerning person at the first feeding; the feeding should not be proceeded with, but the surgeon should arrange the operation without delay.

Dr. Nelson, in reply, said that after the discussion he was better qualified to give an adress on congenital deformity. He was particularly grateful to Dr. Campbell for discussing a new problem, and intended to use encephalography to demonstrate whether cerebral atrophy was due to hæmorrhage or to anoxia. He had intentionally avoided controversial questions in presenting the subject matter of his address.

Some Allergies of Childhood.

DR. S. E. L. STENING (Sydney) read a paper entitled "Some Allergies of Childhood", in which he discussed his findings in 240 consecutive cases of allergic disease in children. One graph showed that most children with allergic disease suffered from their first symptoms in the first two years of life and many of these in the first two months. Another graph showed that most children were brought for advice much later. Dr. Stening confined his attention to some of the allergies which appeared in neonatal life and in the first year. Heat or sweat rash might be the forerunner of urticaria and nasal symptoms later and even of eczematous scaling. Urticaria was sometimes seen in the first week of life; early scattered weals were the harbingers for more disturbing and persistent urticaria and other types of allergy. Seborrhœa or "cradle cap" was often the forerunner of infantile eczema. In the majority of children suffering from infantile eczema asthma appeared sooner or later. In regard to the respiratory system infants sometimes suffered from a thin watery discharge called a "cold"; it was the first manifestation of respiratory allergy in these children. Infants with allergic "colds" appeared to pass through the stages of "frequent colds", "colds with bronchitis", to asthma, though it might be some years before unmistakable asthma was present. Dr. Stening had also come to the conclusion that wheezing in infants had an allergic basis. In regard to the thymus Dr. Stening was less sure of his ground, but he thought that enlargement of that gland should make one suspect an allergic child. In regard to alimentary allergy it had been found that 25% of infants had feeding difficulties in the first year of life. Many of those children developed symptoms of allergy. Dr. Stening quoted a case history which illustrated the kind of events which took place. He quoted a statement by Boyd Graham that a diagnosis of gastro-enteritis or colitis should not be made lightheartedly, as treatment for an infective condition of the bowel would disturb the baby's progress.

DR. MALCOLM COCKBURN (Adelaide) said that he opened the discussion with diffidence as he was not an allergist but a physician interested in pædiatrics. Dr. Stening's paper had given them all a considerable amount to think about as he had condensed into a short space of time an enormous amount of information. If, after taking a history from a parent bringing a child along for treatment, the doctor had to think of asthma as the possible diagnosis, the subject must be very unsatisfactorily understood if only ten could be cured out of one hundred. Allergy was not a disease but a constitutional background that could not be altered any more than the colour of the child's eyes; the doctor should indicate to the parent that he could be expected only to help or to relieve, but not to cure, the child.

Dr. Stening had made a pointed reference to the baneful significance of "cradle-cap" and Dr. Cockburn said that he, too, feared it as a warning or notice of the prospect of troubles to come; it was a harbinger of severe dermatitis and eczema in infancy. Dr. Stening had referred to clear nasal discharges and colds in the head as early evidence of allergy and Dr. Cockburn inquired whether he had obtained any figures concerning eosinophile counts in the mucus or correlationship with allergy.

Dr. Cockburn then commented on the extraordinarily high proportion of illegitimate children found to have allergic signs and symptoms; the foster-parent would come to say that the child had eczema or asthma and add that, of course, the child was not her own child; he placed the proportion at about 60% of adopted and illegitimate children in private practice and wondered whether others present had noted it or experienced it.

DR. KATE CAMPBELL said that there was a ring of truth in every line of Dr. Stening's honest account of all the difficulties of allergies in childhood. She asked him whether he had noted whether the mothers of the babies had altered the dietary considerably during the pregnancy; a woman who was not in the habit of taking milk or eggs might take a lot of milk or a lot of eggs when pregnant in the interest of the unborn child. She then commented on the appearance of colic traceable to an article in the mother's diet and mentioned that milk allergy was common, causing the baby at times to get into such a low state that the condition could be mistaken for pink disease or some such malady. She asked Dr. Stening whether there was a tendency in uncomplicated cases for children to "grow out of" the allergy; psychological and infective factors added to allergy might get worse. Dr. Campbell added that she had noted the high incidence of allergy in the illegitimate and had blamed the extreme nervous tension of the mothers for it.

DR. H. BOYD GRAHAM (Melbourne) commented on Dr. Stening's reference to the association between hyperkinesia and allergy in infancy and stated that it was his custom to use a "shot-gun" prescription of sedatives, antispasmodics and antihistamines in the medication combined with sound dietary and reassurance to reduce the anxiety and consequent over-stimulation of mother and child.

DR. S. G. BRADFIELD (Sydney) said that colds and bronchitis associated with teething were liable to lead on to asthma which was a term of ill-omen. Approximately one baby in four was a "difficult feeder" and became a nervy child with nervy parents who were fussy and oversolicitous.

DR. DOUGLAS GALBRAITH (Melbourne) added another manifestation to those listed by Dr. Stening: effusion into a joint with rise of temperature which turned out to be allergic.

DR. C. T. PIPER (Adelaide) spoke of the use of antihistamine preparations in the sorting of the cases and stated that two-thirds of the patients with chronic antral disease in an out-patient department had been relieved without resort to surgery in a series treated with antihistamine preparations during a period of eighteen months. Allergy-testing was not helpful, but should response to an antihistamine drug constitute a proof of allergy?

DR. PAUL DORNEY (Tasmania) thought that too much emphasis was placed on allergy *per se*; he recognized the chloride deficient group, the psychogenic group and the "scrap heap" known as allergy. The response to dilute hydrochloride medication reported by Dr. Southby might be indicative of the low chloride group. The only condition really established as allergic was *seborrhœa capitis*, and the mother's scalp full of dandruff, had to be treated at the same time as the baby's condition to get a prompt and satisfactory result.

DR. DONALD CHEEK (Adelaide) said that, arising out of the study of pink disease, he had formed the opinion that the exhibition of common salt stopped asthma in early childhood.

DR. L. G. HILL (Brisbane) stated that he had learned to warn parents that young children should be immunized against tetanus with toxoid rather than await the occasion when antitetanic serum had to be injected; recently, despite preliminary skin-testing, the administration of the serum had almost precipitated a catastrophe to the patient.

DR. ROBERT SOUTHBY (Melbourne), with reference to Dr. Stening's commentary on rhinorrhœa persisting a few days and clearing up as an allergic manifestation, spoke of noisy breathing, the "basket of kittens", and liability to frequent "colds" as extensions of that manifestation. He went on to describe the explosive suddenness of the appearance of allergy on meeting with new items of food such as the egg albumen in angel's food; a weal on the lip might form immediately, the eyes be closed within five minutes and severe diarrhœa continue for two or three hours. The "nervous system" factor was also a big one, and it was likely to be the fate of an adopted child as the foster parents were often all the more anxious because the child was "not their own"; a change of environment such as a week-end in hospital usually sufficed to get rid of the allergy. He stated that eosinophile cells in the watery discharge from the nose or eyes and an eosinophilic "response" in the blood picture were of important significance. He also spoke of the ætiological import of dietary changes, saying that the fat content as well as the milk proteins could be troublesome and that skimming should be advised in preference to withdrawal of milk from the diet. Sensitivity to horse dander would be the explanation of anaphylaxis from antitetanic serum; it was wise to immunize the young children with toxoid and to avoid the giving of antitetanic serum.

Dr. Stening, in reply, said that the speakers had been kind to him; he had expected a more hostile reception. There were many therapies, but a kind sympathetic reception by the doctor was very helpful; prolonged freedom from allergic manifestations was difficult to obtain; the interval between them might be even as long as twenty years. He informed Dr. Cockburn that eosinophilia had occurred in half of the children over two years of age, but had not been ascertained in many of those who were younger. He agreed with what Dr. Campbell had said of the changes in intake of milk and eggs by the mother during the pregnancy and the subsequent demonstration of allergy in the baby and quoted a classical example from the United States of America. He informed Dr. Boyd Graham that he, too, used a lot of phenobarbitone for the allergies of childhood. He told Dr. Bradfield that he thought that many of the colds at the teething period were allergic, but not all of them; their occurrence should arouse the suspicion which would lead to early ascertainment, treatment and improvement. In reply to Dr. Piper's inquiry about the role of antihistamine drugs in diagnosis of allergy, Dr. Stening said that they had proved valuable in a small proportion of the cases; he relied on careful history-taking much more than on skin-testing; by means of a long and detailed history and careful progress notes the allergens could usually be identified. With reference to the division of the cases into groups as suggested by Dr. Dorney, Dr. Stening said that more groups should be formed than had been mentioned. In approximately 80% of cases the ultimate cause was of an hereditary nature; evidence of "biological inferiority" was very strong. Commenting on achlorhydria, Dr. Stening said that the acidity of the gastric contents had been investigated in a little over twenty of the cases without the discovery of a single example of achlorhydria and only two or three of hyperchlorhydria. In conclusion, Dr. Stening stated that immunization with toxoid against tetanus was often accompanied by a greater reaction in infancy than at a later age.

Sonne Dysentery in New South Wales.

DR. STEPHEN WILLIAMS (Sydney) read a paper on Sonne dysentery in New South Wales, based on 98 cases of bacteriologically proven Sonne dysentery at the Royal Alexandra Hospital for Children, Sydney, in a period of twelve months from March, 1949, to February, 1950; 51 cases came from the Sydney area, and 47 were due to cross-infection in hospital. Dr. Williams said that inquiries from local health authorities had confirmed the fact that, except for a small number of sporadic cases, Sonne dysentery had not been recognized in New South Wales for the preceding twenty-five years. In the series of cases under discussion, the first indication of its occurrence had been an outbreak of diarrhœa and vomiting in an orthopædic ward in March, nine children being affected; the stools of six of the children yielded a profuse growth of *Shigella sonnei*. No further cases occurred until ten days later, when a patient harbouring the organism was admitted to the gastro-enteritis ward; four further cases occurred in the next two weeks. In April, ten children, three nurses and a relieving sister in a general surgical ward contracted the disease, and during investigations two further cases occurred in another surgical ward; the evidence suggested that these two cases resulted from contact with a nurse who had become infected in the first surgical ward. From then till June 16 more affected children from the city area were admitted to the gastro-enteritis ward. On June 23 a small outbreak involved four patients in a medical ward, and on June 26 a large outbreak involved 17 children and one nurse in a surgical ward. Intermittently patients continued to be admitted to the gastro-enteritis ward, and on August 1 cross-infections occurred for the first time from the gastro-enteritis ward; they affected four nurses of the ward and six whooping-cough patients in the same block. Dr. Stephens said that there had been a low-grade continued prevalence of Sonne dysentery extending from the autumn through the winter and spring months of 1949 until the present time. As dysentery, gastro-enteritis and infantile diarrhœa were not notifiable diseases in New South Wales, it was impossible to assess the full extent of the epidemic in the Sydney area. The disease generally had been mild, and as only children seriously affected were sent to hospital, the infection was probably more widespread than the small number of cases indicated. Dr. Williams then discussed the four separate outbreaks of cross-infection in detail, and said that the evidence pointed as the most likely source of infection to a patient admitted to hospital suffering from unrecognized Sonne dysentery, with another provisional diagnosis. Certainty was impossible, but the nature of the outbreaks suggested strongly that the infection was transmitted directly from unrecognized cases to food served in the ward, probably on the hands of nurses. The measures of control instituted proved effective. Dr. Williams discussed the clinical features of the disease and the bacteriology. He said that it had been difficult in the hospital to distinguish dysentery from salmonella infections and from acute gastro-enteritis of unknown ætiology on clinical grounds, and it was possible that some patients considered to be suffering from acute gastro-enteritis, with negative stool findings, were in fact suffering from Sonne infections in which the organism was not isolated. In the cross-infection outbreaks, *Shigella sonnei* had been recovered from all patients showing symptoms and from a small number without symptoms. It was clear from the data presented that in the State of New South Wales an epidemiological problem had reappeared and demanded the serious attention of health authorities, hospitals and similar institutions. In the series under discussion the clinical picture had been one of apparently mild gastro-enteritis rather than of acute dysentery; but 10% of patients had needed urgent therapeutic and nursing measures, and one child had died of acute toxæmia, so that *Shigella sonnei* had to be regarded as a hazard in the early years of life. The development of such an epidemic in a large modern city was perhaps a reflection on the public health standards and prophylactic measures in force, and it was regrettable that no system of notification had been adopted which might have led to an early appreciation of the situation and possibly to the eradication of foci of infection before an epidemic could occur. The problem of ward cross-infection was one of the bugbears of a children's hospital, and in spite of increased vigilance, atypical cases had continued to turn up in the wards of the Royal Alexandra Hospital for Children. Dr.

Williams said that cross-infection experience at the hospital had revealed some weaknesses of ward hygiene and had led to a tightening up of nursing methods. It was hoped that the measures taken would prevent further outbreaks in the future.

DR. D. C. FISON (Brisbane), in opening the discussion, said that it had been of great interest to hear from Dr. Williams of a recent epidemic of Sonne dysentery in Sydney, as Brisbane had also suffered a similar epidemic, and at the Brisbane Children's Hospital they had had 138 bacteriologically proven cases. Dr. Fison therefore proposed to compare and contrast the experiences and describe some of the features. Past experiences were similar, in that Dr. Fison could not recall a single example for eleven years until the first case of the present epidemic had been established in December, 1949. It was possible that, before the use of selective culture media had improved the accuracy of diagnosis, they might have failed to identify *Shigella sonnei* as the cause of gastro-enteritis. The age-old problem of cross-infection had also been troublesome in Brisbane; they were fortunate to have had help from the Queensland Institute of Medical Research in a Salmonella epidemic and to have been able to apply the results of their investigations and their advice on preventive measures to minimize cross-infection in the Sonne epidemic. The "change up" nurses were debarred from feeding children. Exchange of nurses between "diarrhœa" wards and the other wards was forbidden. All bed linen and soiled clothing was boiled for twenty minutes before being washed or handled. Nail brushes were boiled thoroughly three times a day. Mice and cockroaches were exterminated periodically. Roller towels were replaced by paper towels, and hand towels were laundered promptly after use. Dr. Fison mentioned that the nail brushes were proved to be contaminated and the Sonne organisms had been recovered from mice and cockroaches. They had not had complete success in the control and eradication of the trouble; from time to time Shigella or Salmonella infection broke out in a ward, and the activity of the organisms ceased only after a thorough cleaning of the infected ward; but at Brisbane they had been more successful than their Sydney colleagues in the reduction of cross-infection.

Dr. Fison thought that the Brisbane epidemic was characterized by slightly milder clinical features than the Sydney epidemic; only four of the 138 patients had received intravenous therapy, only one had been seriously ill, and there had been no deaths. Most of the patients had responded rapidly to regulation of dietary, and phthalylsulphathiazole had helped them. For the first day they had received nothing but glucose in water, then equal parts of boiled skimmed milk and water, then full-strength boiled skimmed milk, and protein and carbohydrate foods were added as the child's condition improved. One child who had worried them more than the others was a female baby, aged only five weeks, who had been admitted to the hospital from a housing camp on December 12, 1949, and the *Shigella sonnei* was isolated on the third day; she had passed between three and five stools daily which were green or yellow and slimy. She was given glucose-saline solution by the intravenous route to combat dehydration. She received 250 milligrammes of "Chloromycetin" on the sixth day, and thereafter 60 milligrammes every three hours in the feedings; that medication had been continued until the eighteenth day; the stools were then pasty and yellowish green, the pathogenic bacteria could no longer be recovered from them, and she was thriving and taking four ounces every three hours of "Bengerized" sweetened dried milk and water.

Dr. Fison had observed that the Sonne dysentery patients continued to pass infected stools after apparent cure, but freed themselves of the pathogen eventually; in an attempt to hasten the process they had, in seven instances, been given "Chloromycetin", 100 milligrammes per kilogram of body weight per day, for about four days, the daily dosage being divided equally so that the baby was given some in each feeding, and the *Shigella sonnei* had disappeared promptly in each case. A series of negative results on attempts at isolation was desired before it was considered safe to discharge each of the patients from hospital.

DR. E. SINGER (Brisbane) said that the epidemic had emanated from a housing camp, and, though they were only separated by a road, not a single case had been found in the migrants' camp opposite. Carriers were found in the first six weeks of the epidemic; one was a member of the staff in the ward at the hospital and another was the mother of three child patients. In only one other instance were three members of a family involved; all the cases occurred outside the sewered area of Brisbane.

DR. IAN MACKERRAS (Brisbane) said that Sonne dysentery had been widespread after the 1914-1918 war and a long quiescent period had followed. After a series of investigations of over 1000 stool specimens, a few of which were suspected, but none of which were found to contain true *Shigella sonnei*, suddenly in November, 1949, the *Shigella sonnei* appeared; a new infection had commenced. Dr. Mackerras said that, in the latter part of the recent war, Sonne carriers had been found in large numbers among the troops in Western Australia; the carrier rate was high and the clinical dysentery cases were relatively few. Discussing the mechanism of spread, he went on to say that, unlike the napkin infection of the Salmonella group, the Shigella infection was spread by the later age group in which toddlers and school children mingled.

DR. STANLEY WILLIAMS (Melbourne) said that he was not in a position to criticize constructively a good paper by a good pathologist, but pointed out that Dr. Stephen Williams had conducted a unique research in the midst of his onerous routine duties. In similar circumstances many pathologists would be content to issue the usual report "no organism isolated"; but Dr. Williams had stimulated the officials at the Commonwealth Serum Laboratories till they had obtained for him the requisite serum for the identification of the unknown pathogen. The transmission by adults was an observation of epidemiological importance, as little prominence had until then been given to the concomitant occurrence of adult gastro-enteritis.

DR. MICHAEL WILSON (Melbourne) was able to confirm the implication of adults. He said that it was remarkable that, though sporadic cases abounded, no epidemic of proportions sufficient to be reported had occurred for many years; "mild tummy upsets" produced material from which *Shigella sonnei* had been isolated. At a hospital in Cambridge, England, a large number of the nurses had such upsets; they had accepted the mild diarrhœa as the portion of their profession; if that sort of thing happened at a hospital for children it assumed increased importance. In Melbourne the nursing staff had been "screened", but he had not proved the occurrence of Sonne dysentery. Dr. Wilson said that in Australia it was possibly disseminated by returning service men and women and by migrants; he had worked on two small outbreaks in the past two months and had found one or two sporadic cases in children.

Dr. E. Singer (Brisbane), having been asked to speak again, said that recently, at the Mater Misericordiæ Hospital, two infected families were found who had both arrived by ship from Europe. *Shigella sonnei* was found in the stools of both parents and three children of one family; and in the other family the mother was proved to be a carrier and Salmonella as well as *Shigella sonnei* was isolated from the children's stools. Dr. Singer went on to say that the staff numbered 20 persons, and he had found a Flexner carrier and a carrier of Salmonella (Group III) as well as Sonne carriers, but only the *Shigella sonnei* had been pathogenic to the inmates of the hospital.

DR. S. G. BRADFIELD (Sydney) asked whether all persons suspected of suffering from Sonne or Salmonella dysentery were admitted to hospital in Brisbane for observation and investigation. As only those severely affected were thus treated in Sydney, a difference of practice would affect and perhaps explain the discrepancies in the statistics in Sydney and in Brisbane.

DR. H. L. STOKES (Melbourne) said that, in association with Dr. Southby and Dr. Graham, he had vivid memories of the appalling number of children suffering from severe Flexner dysentery whom they had had to treat at the Children's Hospital, Melbourne, in 1922 and 1923. Dr. Reginald Webster, in those years and subsequently, had isolated and identified many Sonne dysenteric bacteria. Before leaving Melbourne, Dr. Stokes had been informed by Professor Sydney Rubbo that he recovered *Shigella sonnei* occasionally, and that a mild clinical infection at the Alfred Hospital had gone unrecognized for some time before *Shigella sonnei* was found to be at work. Miss Jean Tolhurst had proved the organisms to be extremely resistant to the sulphonamides *in vitro*, and the observation was confirmed by clinical experiences. Three children undergoing streptomycin therapy, who were in close contact with a child from whose stools the *Shigella sonnei* was recovered, were not infected. The *Shigella sonnei* was understood to be sensitive to "Chloromycetin" and to aureomycin.

DR. ROBERT SOUTHBY (Melbourne), commenting on the clinical manifestations, said that in the prolonged outbreak in Victoria to which Dr. Stokes had referred, which was primarily of Flexner and later of Sonne type, in some of the babies the onset had been fulminant. The patients were in a state of shock and toxæmia as though septicæmic and passed dysenteric stools containing blood and slime; under great pressure discrimination had to be exercised in the matter of priority for the wards, and a great number of patients were given treatment as out-patients. The severely afflicted patients died freely, but many were saved by fluid administration, often by the introduction of sterile strictly normal saline solution by the intraperitoneal route. Dr. Webster had commented afterwards that after elimination of the Flexner organisms the position became much easier and that the disease of Sonne origin was much milder. Dr. Southby went on to say that, during the past few months, many migrant children had been in hospital suffering from diarrhœa of various grades of severity, and that more Flexner than Sonne organisms had been isolated.

Dr. Stephen Williams, in reply, said that he had not encountered latent carriers in the staff, but nine staff members had suffered from clinical diarrhœa proved to be Sonne dysentery. In reply to Dr. Bradfield, Dr. Williams said that most of the patients of whom he had spoken had come from suburban practices, and the idea of admitting all suspects to the wards filled him with horror, though he agreed that such a course of action was ideal though impracticable. It was a question of bed space and the provision of facilities; the available accommodation had to be reserved for those who were seriously ill and urgently required life-saving treatment. Though it was true that he was furious when he found that the right serum was not available at the Commonwealth Serum Laboratories, he did not lay the blame at their door, and thanked those responsible for their prompt and successful cooperation with him; it was the responsibility of the public health authority to ascertain, investigate and arrange the supply of essentials for the epidemics, and to take all steps needed to localize, minimize and quell them. The manufacturers of sera should be able to count on the collaboration of all those who use the products.

Recurrent Abdominal Pain in Childhood.

DR. E. S. STUCKY (Sydney) discussed the problem of recurrent abdominal pain in childhood; his paper was based on 100 cases, in which investigation and operation had been directed to discovering the part played by disease of the vermiform appendix. The children, with few exceptions, had been referred from a hospital out-patient department, and an adequate history, pre-operative test findings and thorough operation notes had been available. In addition an attempt had been made to obtain a histological report on the appendix removed, and to follow up the patient until cure or failure was certain. The only basis used in the selection of cases had been sufficiency of data. Dr. Stuckey then presented the conclusions he had reached. He said that the appendix must be suspected as the cause of symptoms in all cases of mild or moderate recurrent abdominal pain, irrespective of periodicity or duration of attacks. Physical examination in such cases gave essentially negative results, and the diagnosis was based on a process of exclusion. However, a suggestive X-ray picture after an opaque meal usually indicated appendicitis. Slight deep tenderness was commonly present. The appendix was frequently found to be in a position where it was not readily accessible to the examining fingers or to the parietal peritoneum. Enlarged mesenteric glands were more likely to be a sign of recurrent appendicitis than of the syndrome known as non-specific mesenteric lymphadenitis. There probably was such a disease as non-specific mesenteric lymphadenitis, but it was not common, and it could not be distinguished from recurrent appendicitis before operation. Removal of the appendix, even in cases in which mesenteric glands were enlarged, would frequently cure the patient's symptoms. The removal of an apparently normal appendix, even one which was found to be normal on histological examination, would frequently cure the symptoms. Such an occurrence did not necessarily throw doubt on a diagnosis of "recurrent appendicitis—appendix normal when removed". Pathologically the condition of subacute or chronic appendicitis was not common, and such terms, as they were used by clinicians, were only occasionally scientific. Oxyuris infestation had no constant relationship with disease of the appendix, nor was the finding of eosinophilia in the bloodstream or in the mucosa of the appendix an indication of oxyuris infestation in all cases. In some such cases the condition might be due to food allergy.

DR. K. B. FRASER (Brisbane) opened the discussion by saying that in 1921, when he was a resident medical officer at the Royal Prince Alfred Hospital, he had been fortunate enough to be the house physician of the late Dr. George Rennie, an erudite physician of the old school who was still remembered by many of those present. On one occasion after an unsatisfactory afternoon in the wards, he had remarked on parting in his rather high-pitched voice: "'Pon my word, Fraser, this medicine's a mystifying business: the older I get the less I know." Dr. Fraser said that he often felt like that about abdominal pain in children. Dr. Stuckey's painstaking review of a large series of cases should stimulate them all to keep more careful records of their cases of vague abdominal pain; they could then work on specific data and not have to rely on impressions. Dr. Fraser had been surprised at Dr. Stuckey's finding that there was usually a slightly tender area and that the tenderness persisted. The component parts of the alimentary tract were so integrated that it was easy to understand that a minor recurring lesion in the appendiceal wall could spread confusion down the length of the alimentary tract, interfering with the normal mechanism which varied muscular tension; it was that very disturbance that must produce the vague, recurrent pain which was almost invariably experienced in the mid-line of the body. However, that pain was truly visceral and was never associated with tenderness; it was hard to imagine how a minor recurrent lesion could give rise to peritoneo-cutaneous radiation with resultant tenderness. Dr. Fraser believed that it was possible to elicit discomfort in the right iliac fossa of any subject by pressing hard enough; he could not bring himself to agree with Dr. Stuckey's interpretation in that respect. Dr. Fraser placed some value on radiological examination, as by that means some of the causes of abdominal pain other than recurrent appendicitis might be uncovered; but it was unlikely to provide positive evidence of recurrent appendicitis itself. He then said that the problem of mesenteric adenitis was very real, and Dr. Stuckey's conclusions were of great value. Aird had pointed out that acute appendicitis and mesenteric adenitis, in the very acute forms, could usually be distinguished; but in the less acute form dealt with in Dr. Stuckey's paper, it seemed impossible to separate them. Dr. Fraser then discussed the differential diagnosis of recurrent abdominal pain in childhood, limiting himself to two points. He first said that in his experience renal lesions were often silent, and if they were not silent they manifested them-

selves in the form of Dietl's crisis or renal colic and were not easily confused with appendicitis. Plumbism was the second condition to be differentiated. Dr. Fraser said that in 1937 he had made the following statement: "Plumbism is a possibility which must never be lost sight of in Queensland: the pain is colicky and spasmodic in nature and is referred to the umbilicus." That statement remained true; recently he had examined a girl from North Queensland who lived in a white painted wooden house; she had had vague abdominal pains suggestive of plumbism, and the scraping from the powdery paint on analysis was found to contain 49 parts of lead in 100. It was necessary to sound a note of warning about reliance on replies to *questionnaires* when the parent was greatly relieved that the operation was over, as the relief of the patient's symptoms might have a large psychological content. In conclusion, Dr. Fraser emphatically endorsed Dr. Stuckey's dictum that children with recurring abdominal pain should not be submitted to operation before a thorough investigation had been undertaken; that dictum should be taught to students as a deterrent to the tendency to wield an over-ready scalpel, which was only too obvious in the inexperienced and over-enthusiastic recent graduates. More experienced surgeons could and should boldly diagnose acute appendicitis and operate on the patient without undue delay.

DR. M. KELLY (Melbourne), to emphasize the necessity to include muscular rheumatism and juvenile rheumatism in the differential diagnosis of recurrent abdominal pain, quoted the following "wisecrack": "What one of us has not seen rheumatism let out by a knife?" Those who did not like that name for it might prefer to call it myositis or myalgia. All pain was both visceral and somatic. Pain in the viscus was associated with tenderness in the somatic tissues, and in a vicious circle the pain could continue somatically after the emphasis had ceased that started it. He illustrated this opinion by describing an experiment in which the pelvis of the kidney had been distended with fluid for only a second or two, with the production of pain and rigidity of the lumbar muscles which had persisted for days. It was well known that abdominal pain might be an early symptom of rheumatic fever.

DR. T. Y. NELSON (Sydney) spoke of the outstanding value of the combined meetings arranged at the Congress, which interested everybody. He had been present at a meeting of the Section of Radiology and Radiotherapy, and had gained the impression that radiologists thought they could diagnose all the causes of abdominal pain. The assembling of practitioners prepared to debate subjects of common interest from different angles was the most fruitful objective of membership of Congress. It had surprised him to hear from Dr. Stuckey of the high proportion of appendices found on histological examination to be normal, although the symptoms indicating the need for appendicectomy were cured. There was room for revision of the hospital records to include the diagnostic methods used and the results of investigation of such conditions as recurrent abdominal pain. Dr. Nelson remarked that minor attacks should be recognized as the prelude to the acute catastrophic surgical emergencies; that was the justification for anticipating the emergency by prior appendicectomy. Children who had recurring abdominal pain such as Dr. Stuckey had described were suffering from appendicitis, and in such a case the appendix should be removed.

DR. K. CAMPBELL (Melbourne) drew attention to the nervous child with fat intolerance and enlargement of the liver who passed pale stools. It was current practice to advise a diet of low fat content and to prescribe a sedative such as phenobarbital, and the pain disappeared. She also referred to the abdominal pain experienced by a child before breakfast, which went when food had been taken; it had been shown that such a child had a low blood sugar level in the fasting state; when barley sugar was given to such a child on waking, the complaint disappeared. Dr. Campbell asked Dr. Stuckey whether he had met those children.

DR. FELIX ARDEN (Brisbane) asked Dr. Stuckey for further information about the statement that 75% of the children in his out-patient department complaining of abdominal pain could be described as highly strung, that in 40% of cases the appendix was proved to be normal, and that of 77% of the patients who were cured, four out of seven only had diseased appendices. Figures such as those aroused the suspicion that it was the operation *per se* which had cured many of them. Many children were supersensitive to pain to the point of complaining of it when it was trivial, or used the pain to secure an advantage; after the operation, it was conceivable that they might be afraid to speak of it again lest worse befall them.

DR. J. BRODY (Gordonvale, Queensland) said that when one had to practise without the advantage of laboratory facilities, one had to rely chiefly on a clinical appreciation of the meaning of abdominal pain. He disagreed with what Dr. Fraser had said about renal pain in children. In the tropics crystaluria was not uncommon as a cause; at times the urine became so concentrated that minimal hæmaturia was also a feature. Dr. Brody quoted the case of a girl, aged nine years, upon whom he had operated because for months she had been suffering from recurrent abdominal pain; he had removed a stone which was impacted in the right ureter. Dr. Brody further mentioned the necessity in the tropics to examine the stools for helminths; *Ankylostoma duodenale* was prevalent where he practised. Though an appendix when removed might look normal, not infrequently worms were present; he did not meet *Oxyuris vermicularis*, but had to be on the lookout for trichiuris.

DR. A. J. M. SINCLAIR (Melbourne) remarked that the cat that walked alone had a good time, maybe, but was apt to get into trouble. Children led a faster life than adults, and physicians should be prepared to revise from time to time the impression formed of a child's personality pattern. Psychiatrists and pædiatricians might walk together more, with mutual advantage. It was futile to conclude on one interview that the cause of abdominal pain was psychological; on another day the child's condition might seem to disprove that opinion. They should be prepared to take an over-all view of the life situation, as that would help in the assessment; attacks of pain could indicate changes in mental environment. Dr. Sinclair held that the child should not be led to the psychiatrist each time he suffered from an obscure abdominal pain, but the pædiatrician should be prepared to take the psychological factors into account.

DR. H. DOUGLAS STEPHENS (Melbourne) said that it was not wise to arrive at a diagnosis on the first occasion, and a few reexaminations might be necessary. He commended Dr. Stuckey for his exemplary carefulness in sending the appendix for examination. Dr. Stephens was satisfied that he himself had removed many appendices that looked innocent until he closed the clamp on the mesoappendix; that made them look as diseased as they could be. Dr. Stephens reminded those present that Professor R. J. A. Berry was often heard to say that the appendix was the policeman of the abdomen, its function corresponding to that of the tonsil at the upper portal; he had noticed that at times the removal of the tonsils might coincide with the disappearance of the recurrent attacks of abdominal pain. He did not think much of worms as ætiological factors, though they were found to be present in about 40% of cases in one series; he always looked for them, and often saw oxyuris. He remembered one suppurative appendix from which many oxyuris worms escaped, and on another occasion the child passed an ascaris on the day after operation. Dr. Stephens discussed the type of treatment that over-anxious mothers gave the children; the rhubarb and soda mixture was common in their earlier days, and pain came on when it was used and disappeared when its use was stopped. Another child had been treated liberally with castor oil, and when Dr. Stephens operated, he and his assistant reduced between 20 and 30 agony intussusceptions; subsequently the use of castor oil was banned, and no more was heard of the abdominal pain.

With reference to renal conditions, Dr. Stephens recalled an occasion on which, after the removal of an innocent appendix, he had invoked radiography and had visualized a calculus impacted in the ureter, which was subsequently removed. Radiological investigation was essential in some cases; it was worthless in most, though it was possible to provide evidence by that means when the appendix was abnormally bound down. He thought it was Hutchison who had described the syndrome of bound-down appendix with inflammation and associated diarrhœa. Dr. Stephens went on to speak of colicky pains occurring in young children each afternoon, which were usually due to achalasia of the ileo-caecal valve. He thought it was Brenneman who had directed their attention to the spasm of the ileo-caecal valve as a factor in such cases. He remembered a child who had had mild abdominal pain and enuresis; he thought the appendix was worth a look, but he had found a small ovarian cyst which he removed, and the child was cured of the enuresis.

DR. ROBERT SOUTHBY (Melbourne), from the chair, mentioned migraine or cyclic vomiting, a term about which he was always complaining; he thought that if they looked hard enough, they would usually find a mechanical cause. They could occasionally get information from an X-ray examination with a barium meal. No reliance should be placed on negative findings, because the appendix might be so sharply kinked that the barium could not enter it. Dr. Stuckey had asked them to revise the terminology and to call the complaint "recurrent mild appendicitis"; Dr. Southby proposed the term "recurring appendiceal colic", and wondered whether Dr. Stuckey would accept it, and whether the patients usually were feverish.

Dr. Stuckey, in reply to Dr. Fraser, said that some somatic and visceral pain provided a fascinating subject, but it could not be debated that day. He agreed that only occasionally could the radiologists be of material assistance in the condition, but when they could make a positive suggestion, he had found that the opinion based on the skiagrams was dependable. He had had the condition of plumbism in mind when considering the conditions to be differentiated from appendicitis, and had satisfied himself that he had covered the possibility by routine insistence on estimations of blood cells and examination of blood films. He was not impressed with the relative importance of muscular rheumatism in the diagnosis; in that condition the pain was in the muscles, whereas the pain to which he was referring was in the abdomen. They could not cure muscular rheumatism by making a scar, and rheumatic carditis did not follow. The renal causes were not prominent in the series he had analysed, but he conceded that their presence might explain a few of the failures. Dr. Stuckey thanked Dr. Campbell for drawing his attention to the syndromes of pale stools and low blood sugar level. He had overlooked the necessity to include inquiries along those lines in his *questionnaire*. There was a simple answer to Dr. Arden, who had asked him to explain the high percentage of over-strung children; the information was collated from the answers to the *questionnaire*, and the diagnosis was made by the parents. He agreed with Dr. Brody that clinical assessment of the cause of the pain was of great importance. He, too, made decisions on clinical grounds; however, for the purposes of his address he had instituted an inquiry which was the subject of his report. He had to confess to Dr. Sinclair that he had not made a profound investigation of the mental environment of the patients and their families. He appreciated the comments of Dr. Stephens, from whom they were all prepared to learn, and agreed heartily about the change which took place in the appearance of the appendix when the clamp was closed. In conclusion Dr. Stuckey said that he had great pleasure in accepting Dr. Southby's improvement in nomenclature, and in future would use the term "recurring appendiceal colic".

Section of Oto-Rhino-Laryngology.[1]

President: G. C. Halliday, M.B., Ch.M., F.R.C.S., New South Wales.
Vice-Presidents: Walter Crosse, L.R.C.P., F.R.C.S., F.R.A.C.S., Queensland; B. Hiller, M.B., B.S., F.R.A.C.S., D.L.O., Tasmania; L. W. Johnston, M.B., B.S., F.R.C.S., F.R.A.C.S., D.L.O., Victoria.
Honorary Secretary: A. K. Green, M.B., Ch.M., Queensland.

President's Address.

DR. G. C. HALLIDAY said that he had chosen the subject of "The Care of the Deaf in Australia" for his presidential address because of the gradually increasing public consciousness that the problem of those with defective hearing must become a national responsibility. A good deal had already been done in Great Britain and the United States, and in Australia the rubella epidemic in 1940-1941, with its aftermath of deafness in children, had acted as a stimulus to the provision of help for these children. Dr. Halliday quoted Silverman's definition of a deaf child as one who had not sufficient residual hearing to understand speech successfully, even with a hearing aid, without special instruction, and stated that the term "deafness" denoted an impairment in hearing and not complete deafness. He then went on to discuss available statistics on the incidence of deafness, and estimated that 1% of children in the age group from five to seventeen years would theoretically have hearing defects. He offered suggestions for use if a complete auditory survey should be undertaken. Discussing the detection and diagnosis of deafness in the child, he said that failure to learn to speak in an average time must always be suspected as being due to deafness, as was the lack of response by a child to everyday sounds; screening tests could be carried out either with the group audiometer or with the pure-toned audiometer. The child should be examined by an otologist, to whom should be available the child's personal history with a full school report, including the intelligence quotient and behaviour characteristics. Dr. Halliday then described the facilities available in New South Wales for the education of the deaf at various schools controlled by the Government and other agencies, and referred to the fact that hearing aids were being supplied to children free of cost by the Commonwealth Health Service. He outlined the activities of the Commonwealth Acoustic Laboratory in relation to civil aviation, the Repatriation Department, the testing of school children for deafness, and the standardizing of audiometers and other acoustic equipment. He referred briefly to the work of the two main societies concerned with deafness among adults in New South Wales—The Deaf and Dumb Adult Society of New South Wales and The Australian Association for Better Hearing (New South Wales Branch)—and to the position in regard to the supply of hearing aids in that State.

Dr. Halliday then went on to discuss the future of the problem and stated that the approach to the problem of deafness in the community must be based essentially on the education of the child who was deaf or had hearing impairment. The most difficult problem in the education of those born deaf, and of those who acquired deafness at so early an age that they lost their ability to maintain what little language they might have possessed, was to teach them to speak and to understand speech. He praised the work of the Ewings for their pioneering development in speech training among very young deaf children. He felt

[1] The meetings held by the Section of Oto-Rhino-Laryngology with the Section of Radiology and Radiotherapy, and with the Section of Neurology and Psychiatry and the Section of Ophthalmology have been recorded.

that the greatest defects in the care of the deaf in New South Wales were, firstly, the lack of adequate provision for the pre-school child, and secondly, the fact that the care of the deaf was largely in the hands of four different bodies without the coordination of any constituted authority; the problem for Australia as a whole was essentially the same. He made the following recommendations for the care of the deaf: firstly, that the responsibility for the education of the child should be on the community; secondly, that training centres should be set up for teachers and associate workers, including teachers of speech training and speech reading, audiologists, acoustic physicists, speech correctionists, vocational officers, and psychologists; thirdly, that hearing centres should be established in the large teaching hospitals, with facilities available for efficient testing of the deaf, and workshops with trained technicians capable of fitting hearing aids, executing repairs and carrying out general maintenance, and with a staff including an otologist, an audiologist, an acoustic physicist or technician, and various consultants; finally, that a consultative body should be established with committees in each State to coordinate the activities of the various agencies concerned in the care of the deaf.

DR. E. GUTTERIDGE (Melbourne) described the hearing aid clinic which had been established in the Victorian Eye and Ear Hospital. The staff consisted of a medical officer and a technician; it was hoped later to have a teacher in lip-reading. The space allotted comprised a sound-proof room containing a booth with speech-reading apparatus. A full battery of hearing aids, provided by the makers of the various types, was available for trial. Dr. Gutteridge then described the investigation and treatment of the deafened patient. He said that the routine otological examination was made first and was followed by an audiometric examination. Speech reception tests were then made with spondee words measured in decibels, either by means of the voice spoken through a receiver or else by the playing of a disk. In one corner was a "peep-show" for the testing of children. An individual ear-piece was then made for each patient, and it had been found advantageous to retain a former employee of a hearing-aid firm for that purpose. After trial of the various brands the deafened patient was issued with the appropriate hearing-aid and was again tested under the conditions used at his original test, and the two results were compared. Finally came instruction in the best use of the hearing aid. Radon applications to suitable patients were performed at the clinic. The dosage employed was 2000 millicuries to each side.

DR. KENNETH GREEN (Brisbane) said that in Queensland the education of deaf and blind children was the responsibility of the State Department of Public Instruction. Education was compulsory between the ages of seven and sixteen years. Free board and lodging, as well as free tuition, were provided for all pupils whose homes were too far distant from the school for them to attend daily, and free transport for all children and their escorts was provided both by the Railway Department and by the Brisbane Tramways Department. Each of nine classrooms at the School for the Deaf was equipped with a group hearing aid, and an experimental class was being conducted in which children were using portable hearing aids supplied by the Commonwealth Department of Health. The aids were being maintained at maximum efficiency by the Commonwealth Acoustic Laboratory. The school had 217 enrolled pupils at present, of whom 144 were in residence. The Adult Deaf and Dumb Mission provided for the moral, social, educational and economic needs of ex-pupils of the school. A valuable feature of that organization's work was the adult education class, which enabled former pupils to continue their education beyond the ordinary primary grades. There was also a branch in Queensland of the Australian Association for Better Hearing.

Dr. Green went on to say that it was interesting to note that almost 70% of the 217 severely deaf children enrolled at the Queensland school were born in the two years 1938 and 1941, following what could be regarded only as disastrous outbreaks of maternal rubella. Dr. Green presented figures to support that statement. He made a plea for a better standard classification of children with hearing losses. In extension of Dr. Halliday's classification Dr. Green suggested three groups: (i) a "hard of hearing" group, in which the hearing loss was 15 to 30 decibels; that group corresponded with Dr. Halliday's first group; (ii) a "partially deaf" group, in which the hearing loss was 30 to 60 decibels; that group corresponded with Dr. Halliday's second group, and nearly all its members would need and benefit by personal hearing aids. Some of them would then be able to attend ordinary schools, some special classes only, and a few would need the schools for the deaf; (iii) a "severely to totally deaf" group, in which the hearing loss was over 60 decibels. Its members would benefit by hearing aids, but a large proportion would still need training at special schools for the deaf. Dr. Green said he realized that in that broad classification there would be overlapping of groups, and that in any individual case the classification would be profoundly modified by the age of onset and by the intelligence quotient of the patient.

Dr. Green endorsed Dr. Halliday's remarks about hearing centres, and brought to the notice of the meeting a recent letter written by the Director of the Commonwealth Acoustic Laboratories to the Chairman of the Repatriation Commission. In the letter, the Director offered a full rehabilitation service to all deafened ex-service personnel. The programme submitted was complete and extensive, but was entirely devoid of any medical direction, for in it otologists were called on to act only in a consulting capacity within the limits laid down by the director. As such rehabilitation would eventually extend to all deaf patients, its significance to all otologists, and not merely to those attending Repatriation hospitals, could be readily appreciated.

Modern Developments in the Diagnosis and Treatment of Ménière's Disease.

DR. B. BLOMFIELD (Sydney) said that a strict definition of the condition first described by Prosper Ménière in Paris in 1861, and now known as a separate pathological condition under the name of Ménière's disease, distinguished it from a number of other conditions with a different pathology but somewhat similar symptomatology, which had come to be classified under the somewhat loose term "Ménière's syndrome" or "Ménière's symptom complex". Dr. Blomfield then briefly described the pathological findings in post-mortem specimens of the inner ear in subjects known to have suffered from typical Ménière's disease. He said that although the ætiology was unknown, there were various theories as to its causation. The nature of the symptoms, with their tendency to remissions and attacks or crises, established the diagnosis. Much work had been done in regard to the interpretation of the reactions to caloric stimulation; but it was not established that they were at present of very much value in diagnosis. Although medical treatment was said to "muffle" the disease but not to cure it, Dr. Blomfield mentioned the means so far recognized as being of value. Intralabyrinthine surgery for the relief of the condition had been practised for a considerable time; however, the introduction of chemotherapy and antibiotics appeared to have further stimulated it, with the result that there was a growing tendency to operate on these patients. Treatment by section of the eighth nerve, drainage of the endolymphatic sac, and alcohol injections into the labyrinth were discussed. Dr. Blomfield, in conclusion, said that a genuine effort was being made to discover means of helping those unfortunate enough to develop the disease. In the meantime, although every endeavour was made to try every possible form of medical treatment before advising operation, yet there were some patients who could be relieved only by surgical methods, and whose lives were endangered unless they received surgical treatment.

DR. C. JACKSON (Brisbane) discussed the way in which patients suffering from Ménière's syndrome had been presented to him. In his experience there had always been a history of a loud noise and extreme giddiness. For

that they had been treated by their own doctor with some alleviation of their symptoms. They had then been referred to the otologist. In Dr. Jackson's experience no symptoms were the same in all cases. In discussing various patients who had been under his care, Dr. Jackson said that he had found that they were sensitive to histamine. Treatment with "Hepamine" had given satisfactory results.

DR. N. M. CUTHBERT (Perth) asked Dr. Blomfield whether he could enlighten him about acute psychological trauma as an ætiological factor in Ménière's syndrome. Dr. Cuthbert quoted the distressing case of a young woman who had been subjected to severe mental trauma, and who had suddenly developed a severe attack of Ménière's disease in one ear. Extreme deafness in the affected ear resulted. Dr. Cuthbert had ventured to prophesy that the other ear would not be affected; unfortunately it was affected three months later. The deafness in both ears had persisted ever since.

DR. R. H. VON DER BORCH (Adelaide) said that he had become discouraged in his management of patients suffering from Ménière's syndrome. In his experience, the only good results had come from operation. He had not been convinced by the theory of vitamin deficiency as an ætiological factor. He believed that there was a danger in the principle of Passe's method of injection with local anæsthetic solutions.

DR. S. SUGGIT (Brisbane) said that the labyrinthosis theory of Mygind and his co-workers in Copenhagen, in which an increase in the fluid output of the humoral system of the labyrinth produced a rise of perilymph and endolymph pressure, was widely accepted. Hallpike and Cairns had found gross dilatation of the endolymphatic system in a small series of temporal bones from Ménière patients, but those changes were not present in the temporal bones of three patients recently reported by Sture Berggren. Lempert and his colleagues, disputing Holmgren's contention that decompression of a supposedly raised intralabyrinthine pressure was partly responsible for the increased hearing that followed fenestration of the lateral semicircular canal in otosclerosis, had performed a series of experiments on monkeys. By means of a pressure system communicating with a fistula in the lateral semicircular canal, a sound-producing system and cochlear electrodes, Lempert had recorded the cochlear potentials under varying conditions of intralabyrinthine pressure. An increase of perilymphatic pressure up to 50 millimetres of mercury did not interfere with the functioning of the sensory cells of the organ of Corti. Mygind and Lempert, though tackling different problems, appeared to be at variance. The conditions that Lempert found in acute rise of intralabyrinthine pressure were not necessarily those present in chronic intralabyrinthine pressure. If Mygind was right, fenestration with preservation of an intact membranous labyrinth, as performed in otosclerosis, might produce a drainage area for the perilymph into the subepithelial tissues, and, should the membranous canal become adherent to the skin flap, possibly also a direct drainage area for the endolymph. Meurman, at the twenty-fifth anniversary of the Finnish Otolaryngological Society in February, 1949, had reported four cases of fenestration for Ménière's disease. He did not state whether the membranous labyrinth was deliberately destroyed, as in the operation of Terence Cawthorne. He simply stated that he "promised to deal with the results obtained by fenestration in Ménière's disease in the future, because the number of cases was still too small". To perform a fenestrate operation with deliberate preservation of the membranous labyrinth in an early case of Ménière's disease—the type of case in which wide fluctuations in hearing were present and in which the pathological changes might still be reversible—seemed a reasonable experiment.

Dr. Blomfield, in reply to Dr. Cuthbert, said he had no direct knowledge of psychological trauma as an ætiological factor, but it seemed a possibility.

Post-Operative Treatment after Radical Mastoidectomy.

DR. R. E. BUCKINGHAM (Orange, New South Wales) discussed the post-operative treatment after a radical mastoidectomy. He said that in the past the attention of the surgeon had been required, to ensure that the packing *et cetera* were properly carried out. The shortage of hospital beds made it necessary to shorten patients' stay in hospital if possible. For the last ten years he had treated radical mastoidectomy patients by inserting a tube into the external auditory meatus, and the results had been satisfactory. About 50 patients had been treated in that way, and the results had been uniformly good, except when he deviated from his set routine.

The cutting of the flaps was most important. A T-shaped incision was cut in the posterior meatal wall to make the flap, and as much soft tissue and cartilage as possible was removed from it. The upper and lower flaps were then stitched back so that the opening resembled a double door which had been opened. The next step was the selection of a tube, which should be slightly curved, stiff and about the thickness of one's index finger. The size of the opening in the posterior meatus was gauged by pushing in the index finger. The tube was pointed like an ordinary teapot spout, and was so inserted that the pointed tip fitted in the region of the attic, and in so doing kept the latter from granulating over. Before the tube was placed *in situ* the cavity was wiped out with some bismuth, iodoform and paraffin paste, and some sulphanilamide and penicillin powder was blown in. The ear was then closed behind. By way of post-operative treatment the nurse poured a liberal supply of 10% ichthyol and glycerin solution into and around the tube, and spirit was applied freely at the back of the wound. The tube should be left in as long as possible—a week, ten days, or, if possible, twenty-one days. The ear should be watched for any evidence of inflammation. If this occurred, the tube should be removed immediately.

Dr. Buckingham said that in a total of 50 cases he had had one case of perichondritis, which occurred when he deviated from his usual post-operative treatment. He had instructed the patient, who went home, to put in boracic acid. This formed a hard ball and when the patient returned two weeks later he had perichondritis, due to obstruction of the drainage.

DR. W. CROSSE (Brisbane) said that it had been interesting to hear Dr. Buckingham's method of post-operative treatment of patients who had been subjected to radical mastoidectomy. Any medical or surgical method which aimed at shortening the patient's stay in hospital and cut down the need for frequent and painful dressings was welcome. Dr. Buckingham employed the post-aural route with a T-shaped incision in the posterior meatal wall and a rubber drain in the meatus. Dr. Crosse said that his experience with rubber drains had been disappointing, but at the present time, with chemotherapy and the antibiotics, the whole position had changed. He could look back for many years and recall how radical and simple mastoid operation dressings were changed within a few days of the operation and then daily afterwards, often for months on end. He soon realized that too early removal of packing caused the breaking down of the delicate capillaries that were forming, whereas if the packing was left longer the bone would soon be covered with firm, velvety granulations, making a good bed for epithelialization to take place. He had then tried leaving the packing in for at least a week or longer (provided that there was not too much suppuration), but changed the wool in the concha daily. Subsequently dressings were changed every three days, the packing being dispensed with altogether as soon as possible. Thiersch grafting was then tried and found to be satisfactory, considerably cutting down the period in hospital. Dr. Crosse said that he had had no experience with Thiersch grafting combined with chlorophyll. Many flaps had been recommended, but all involved incision of cartilage. The T-shaped flap recommended by Dr. Buckingham helped to start epithelialization upon the facial ridge and the upper part of the mastoid cavity.

Dr. Crosse said that he had in about 1940 abandoned the post-auricular route for conservative and radical mastoidectomies and had adopted Lempert's endaural route, with

the modification that he did not make the third incision or remove the triangular piece of tissue as recommended by him. His reason for using that route was first and foremost that the incision was extracartilagenous, reducing to a minimum the risk of perichondritis. It was less painful, left a meatus of adequate size, and gave a good cosmetic result. When healing was complete the mastoid cavity was not so large, so débris was less likely to accumulate; thus the frequent toilets so often required with large open cavities were diminished. Cold air was also less likely to strike the inner tympanic wall. Atresia did occur at his first attempt at the endaural route; eventually opening occurred. Dr. Crosse went on to say that in the attico-antrotomy operation the flap was laid down in the attic and additus after removal of the incus and the head of the malleus, as in the fenestration operation. In the radical mastoidectomies half the flap was laid over the facial ridge and the upper half on the roof of the attic and additus. The cavity was then dusted with penicillin and sulphanilamide powder, the flaps were covered with "Oxycel", and finally the cavity was filled with gauze, which was gently pressed home to mould the "Oxycel". The external incision was closed with one or two stitches, but no attempt was made to approximate the skin of the meatus. A further piece of gauze was then placed in the meatus, well tucked up onto the upper wall. The ear was covered with the usual pad and bandage. After operation penicillin (300,000 units) was given daily for three or four days. If the patient's temperature was normal the dressings were left undisturbed for a week, when the outer pads and stitches were removed and the pad and bandage were replaced. The mastoid cavity was left alone until the tenth or twelfth day, when the gauze was removed and some "Oxycel" was picked out, no anæsthetic being necessary. The cavity was then lightly dusted with penicillin and sulphanilamide powder and packed with gauze. Two or three days later the cavity was again dressed, and most of the "Oxycel" could be removed with forceps or syringed out. Light packing was placed in the tympanic and meatal regions only, after they had been dusted. At the next dressing the last procedure was repeated. The use of the meatal wick was discontinued as soon as possible. Dr. Crosse said that patients could leave hospital the day after the first dressing, and some had done so; but he much preferred to keep them in hospital a few days longer. The results with that method had been highly satisfactory.

DR. E. GUTTERIDGE (Melbourne) gave a brief historical review of the incisions by the post-aural and endaural routes, and of the method of Popper. Dr. Gutteridge described his approach, which was by the endaural route, but with a modification. The flap was not removed, but was split, some cartilage was removed, and the tongue-shaped flap was forced against the posterior wall of the cavity. There it remained for ten to fourteen days, kept in place by sponge rubber for compression after the method of Shambaugh. The upper part of the incision was left widely open, and that left a cavity shaped rather like the letter "Q". The rubber was removed on the fifth day and the cavity was packed with "Vaseline" gauze. The cavity was maintained at its fullest size until the twenty-first day.

Dr. Gutteridge said that the problem of cerumen in the cavity was one which he was trying to solve. Recently he had tried the effect of X rays, the principle being similar to that of the effect of X rays in epilation of hair. Dr. Gutteridge went on to describe his method for attico-antrotomy. He had found that operation best for cholesteatoma in the attic.

DR. P. RUNDLE (Brisbane) made some comments from a physiological and pharmacological point of view. He thought that if "B.I.P.P." was used, the paraffin in the preparation would prevent the antibiotic from coming in contact with the tissues. He also asked the reason for the use of ichthyol and glycerin, and wondered what was the necessity for using spirits if the antibiotics were used.

DR. G. C. HALLIDAY (Sydney) described the method of radical mastoidectomy in favour in the United States of America and Canada at the present time. Mostly it was a radical procedure performed usually by the endaural approach.

Dr. Buckingham, in reply to Dr. Rundle, said that as far as "B.I.P.P." was concerned, he had been brought up in the old school and had always had faith in it as a result of his war experience with the preparation. Secondly, he remembered that when he was a house surgeon glycerin and ichthyol had been used for treating cauliflower ears and the like, and he still found the mixture handy for that purpose. With the advent of antibiotics he had considered it advisable to add them to his method. Finally, the purpose of the spirit was to keep the wound dry.

Nasal Plastic Surgery.

DR. A. B. K. WATKINS (Newcastle) gave a short survey of the plastic surgery of the nose, beginning with simple conditions usually treated by oto-rhino-laryngologists and proceeding to cosmetic surgery, usually handled only by plastic surgeons. Among the subjects discussed were fractured nasal bones, rhinophyma, chronic crooked nose, depressed nasal bridge, total and partial rhinoplasty, hump nose, long nose, bulbous nose *et cetera*. Dr. Watkins laid particular emphasis on his splint for use in comminuted depressed fractures of the nasal bones, on his dermo-epidermal suture, on an alternative operation to the Joseph-Frühwald operation for crooked nose, and on a number of practical points of value in routine procedures.

DR. D. OFFICER BROWN (Sydney) read a paper entitled "Some Aspects of Nasal and Frontal Reconstruction". He gave some brief historical references to nasal damage and repair, and said that plastic and reparative surgery had its roots in antiquity. Nose injury or disease might cause loss of skin cover, of lining, of supporting bone or cartilage, or of all three. In all repair surgery the maintenance or restoration of function should be the first consideration. Contour was vastly more important than scars. Dr. Officer Brown first discussed bone losses and deformities. He said that lateral deviations, however gross, could be corrected by refracture. Septal deviations might present a problem of management. If the deviation was gross and in the direction of the bony deformity, the rhinologist was asked to perform a septal resection as a preliminary procedure. If the deviation was not gross or was away from the bony deformity, if suitable steps were taken, septal resection might be postponed and correction of the primary bony deformity might result in a good airway with a reasonably central septum. After refracture a closely fitting mould of "Cellona" plaster was used for two weeks; the deformity had a tendency to recur if allowed to do so. Depression of the dorsum of the nose was dealt with by the use of a cancellous bone graft from the ilium; a columella strut was usually required, and for that bone closer to the cortex was preferred. Once again a plaster mould was applied and retained for several days. Dr. Officer Brown discussed his preference for cancellous bone over other materials in use, and mentioned its advantages. Turning to reconstructive rhinoplasty, Dr. Officer Brown said that surface skin defects were repaired with post-auricular Wolfe grafts, with split-skin grafts or with flap skin—small local flaps, forehead flaps or pedicled flaps from arm, chest or abdomen. He discussed the advantages and disadvantages of each type of graft, and the circumstances in which each might be the most suitable. He thought that pedicle flaps might on occasion be necessary, but they were unsatisfactory in general and should be avoided. Referring to forehead flaps, he said that three classical types were used—the oblique or Indian type, the temporal artery type, and the sickle-shaped or "up and down" flap of Gillies. All had their widest application in reconstructive rhinoplasty, and all had advantages and disadvantages. Dr. Officer Brown described the conditions in which they would be required, and mentioned a modification of the sickle flap which he had used for years. It was so designed that the middle part of the flap remained broad; the base of the flap was folded upon itself and formed a kind of tube, but no sutures were required to effect the tubing process. Dr. Officer Brown

said that the making of a tubed pedicle on the forehead could never in any circumstances be justified. Primary grafting of the large forehead defect was important. All the forehead flaps were made without "delay", acute kinking and stretching must be avoided, technique must be gentle, hæmostasis must be good, and hæmatoma formation must be avoided. Care must be taken not to cut off the blood supply by pressure dressings or moulds. Dr. Officer Brown then discussed the problem of lining; he considered that the best procedure, if possible, was to turn down a skin lining from the existing skin on the base of the nose and from the edges of the defect. After full-thickness excision for carcinoma it was usually best to suture skin to mucous membrane along the edges of the resected area or to perform an epithelial inlay. After a sufficient lapse of time the necessary lining could be turned down from that edge. The same principle could be applied in certain cases of old injury when central loss and repair had resulted in a grossly uptilted tip, but relatively normal alæ and columella. Dr. Officer Brown also discussed what should be done when the problem was one of lining alone. After short reference to frontal reconstruction he closed his paper by emphasizing the importance of smooth anæsthesia and careful nursing.

DR. B. K. RANK (Melbourne) said that he was concerned particularly with maltreatment of the fractured nose. In the casualty department of most hospitals one often heard rationalizing arguments about X-ray films. However, the main consideration was, what was going to be done? Dr. Rank asked what time had ear, nose and throat surgeons spent in the casualty department instructing house surgeons in the correct management of fractured noses. He thought that they were all partly to blame for the lack of instruction. Furthermore, he asked whether one ever saw the treatment of a fractured nose appearing on examination papers in surgery. It was up to surgeons to rectify that position by disseminating in the correct places the information about the proper management. Referring to the treatment of rhinophyma, Dr. Rank said that he did not agree that grafts had no place. To take the condition in its early stage in, say, a successful young business man, it was cold comfort to him to say that he should return in ten years' time, for instance, and then have the excess tissue removed. Dr. Rank believed that radical replacement of skin had a definite place in that type of case, and for it he used not a split-skin graft, but whole skin. Dr. Rank asked for opinions from ear, nose and throat surgeons about the management of the deflected septum in a nose with lateral displacement and an obstructed airway. He wondered whether the septum should receive attention before, during or after the other procedures. It was not right, in his opinion, just to perform a submucous resection. In the restoration of saddle defects Dr. Rank was in agreement with Dr. Officer Brown about the use of cancellous bone. Dr. Rank had started with cancellous bone when he first began plastic surgery; his results had been satisfactory and he had seen no reason, therefore, to depart from its use. It was significant that American surgeons seemed to be changing their methods from time to time. That, to him, seemed an admission that they were not completely satisfied with any one method. The answer to that, he was fairly sure, was that they had not used cancellous bone. Boiled beef bone and similar substances, in his opinion, behaved in the same manner as vitallium—as a foreign body. Dr. Rank said that he had never lost a piece of cancellous bone graft. In cosmetic operations the surgeon had to be sober in his appraisal. They were very difficult. The whole nose had to be taken to pieces to correct a deformity. Dr. Rank said that neither speaker had mentioned the indications for the various cosmetic operations. That question must be approached carefully. Some patients were hard to please. The end result might satisfy the surgeon and the audience, but not the patient, and that was the only consideration. The correct approach was to know just what the patient expected. If that was not clear in the surgeon's mind, a surgical failure was imminent.

DR. ERIC GUTTERIDGE (Melbourne), in reply to the question about the treatment of the septum before, during or after the other operations, said that he believed that in depressed or displaced noses the septal procedures should be carried beforehand, but in the hump deformities the septum should be dealt with at the same time. Cartilage and bone graft each had a place in different types of case. Cartilage was particularly useful when the size of the defect was not large enough to justify the taking of a bone graft. Anterior dislocation of the septal cartilage was disfiguring and also productive of obstruction. Removal of the whole of the cartilage by means of a spokeshave, straightening it and then reversing it before suturing it again behind the columella, was the best procedure. There was in his experience no method of partial removal which gave such a good result. At the same time the columella might be thinned.

DR. N. M. CUTHBERT (Perth) had found that cartilage sometimes seemed to bend.

DR. G. C. HALLIDAY (Sydney) described Fomon's experience in the United States of America. There, cartilage from a bank was used and cancellous bone was reserved only for large defects.

DR. R. H. VON DER BORCH (Adelaide) in further reference to Dr. Rank's question about septal procedures, said that he thought that the plastic surgeon was making a concession to the ear, nose and throat surgeon in asking him to undertake that work. In his opinion it was up to the plastic surgeon to carry out the entire procedure. Dr. von der Borch mentioned a patient who had had a large amount of radiation therapy to rodent ulcers on his nose and whose nose had practically disappeared. He wondered whether a forehead flap was justified when the skin of the forehead was already likely to produce further rodent ulcers.

DR. R. P. RUNDLE (Brisbane) wondered whether local anæsthesia had a place in the various procedures described.

DR. W. CROSSE (Brisbane) inquired what were the best incisions for grafts for depressed noses and also for osteomyelitis of the frontal bone.

DR. V. BULTEAU (Sydney) described a method which Dr. Ashleigh Davy used for sawing through the frontal process of the maxilla. It was through a small incision about half an inch in length in the labio-gingival sulcus anteriorly, as in the ordinary incision for radical antrostomy. It gave a good approach and facilitated sawing.

Dr. Watkins, in reply, said that his objection to cancellous bone was that it produced a hard, immobile nose. He agreed with Dr. Gutteridge that septal procedures should be performed at the same time as the operation for hump nose. It used to be the practice of Frühwald in Vienna to have a photograph of the patient taken and then to block out the part which he was going to remove. If the patient expressed satisfaction, Frühwald said that he would like to keep it as a memento, asked the patient to sign it and then locked it up for future reference if needed. In reply to Dr. von der Borch, Dr. Watkins said that he would advise the procedures mentioned, and a careful watch for the development of rodent ulcers, so that they could be dealt with before they did harm. In procedures under either local or general anæsthesia he employed infiltration with local anæsthetic solutions. If general anæsthesia was used, he preferred an open circuit.

Dr. Officer Brown, in reply to Dr. Crosse, recommended the use of a columellar incision almost always. He considered that it would be presumptuous on his part to advise about the frontal incision. He thought that the ear, nose and throat surgeon should follow his own dictates in that connexion. Dr. Brown, too, had always used general anæsthesia except for minor procedures, but he also infiltrated the area with local anæsthetic solution as well as always having the nose packed with cocaine and adrenaline. He said that one should be wary in cosmetic surgery, and not inclined to rashness. Dr. Officer Brown had on several occasions had to remove cartilage which had become badly bent. Free discussion with the ear, nose and throat surgeon about the question of operations on the septum had, in his experience at the Repatriation General Hospital, Concord, enabled a decision in each case to be made according to the indications.

Section of Neurology and Psychiatry.[1]

President: H. Maudsley, M.C., M.D., B.S., F.R.C.P., F.R.A.C.P., D.P.M., Victoria.

Vice-Presidents: Professor J. Bostock, M.B., B.S., F.R.A.C.P., D.P.M., Queensland; Professor W. S. Dawson, D.M., M.B., B.Ch., F.R.C.P., F.R.A.C.P., D.P.M., New South Wales; S. B. Forgan, M.B., B.S., D.P.M., South Australia; W. J. Freeman, M.B., B.S., Tasmania; R. G. Williams, L.R.C.P., M.R.C.S., Western Australia.

Honorary Secretary: N. V. Youngman, M.D., M.R.A.C.P., Queensland.

President's Address.

DR. H. F. MAUDSLEY (Melbourne) chose as the subject for his president's address "Evaluation of Neuro-Psychiatric Symptoms". He said that in 1920 when the Australasian Medical Congress met in Brisbane, the president of the Section of Neurology and Psychiatry, who was a physician and not a specialist in neurology and psychiatry, delivered a presidential address which had never been published. On looking through some old papers he had come across the manuscript of the introductory portion of that address. It had begun with a masterly sketch of the discoveries of the architecture of the nervous system and of the physiological principles of its various functions. This had been followed by a description of cases resulting from wounds of the 1914-1918 war which showed how the work of pioneers in the field of neurology and psychiatry might be applied. The author of this address was Dr. Maudsley's own father, the late Sir Henry Maudsley, who was a physician with a profound knowledge of neurology and of humanity, rather than of psychiatry. Dr. Maudsley said that he appreciated greatly the honour of being allowed to follow in his father's footsteps as president of the section. Since the war of 1914-1918 there had been a tendency to separate neurology and psychiatry. Neurologists and psychiatrists were, however, primarily physicians with a physician's outlook, which was to relieve suffering and if possible to prevent the establishment of a disease entity. It was therefore no anachronism that the title "Section of Neurology and Psychiatry" had been retained. Psychological medicine had departed from neurology only because it brought within the sphere of medicine those forces which governed the intellectual and emotional trends of the individual outside as well as inside the body corporeal. Dr. Maudsley pointed out that the medical student was absorbed mainly with the physical aspect of internal medicine and that he interpreted symptoms in the light of physical investigations and findings. He was rarely told that emotional factors might produce a similar train of symptoms. Early training would easily overcome any embarrassment which a student might experience in a psychiatric interview, and he would soon be able to produce the result of such an interview with considerable knowledge and insight. It was at the level of the family doctor that the interpretation of early neuro-psychiatric symptoms was most valuable. It had been said, on the introduction of the term "psychosomatic medicine", that the experienced doctor was aware of the fact that every illness had an emotional content. Dr. Maudsley thought that it was only partly realized by even experienced physicians and surgeons that the more superficial anxiety, irritability and so on, seen in everyday practice was not covered by the term psychosomatic. Psychosomatic medicine dealt with psychological factors which had some ætiological bearing on the illness and might have considerable influence on its course. Those factors might not be obvious to either patient or doctor and might be even elicited only after a series of psychiatric interviews. It was important to distinguish between psychosomatic medicine and psychosomatic disorders. Stalker had pointed out that the latter were few in number and included bronchial asthma, gastric and duodenal ulcer, essential hypertension, arterial degeneration in middle age, migraine and certain other diseases.

The other side of the picture presented itself when the psychiatrist was attempting to put a value on symptoms which appeared on the face of it to be psychoneurotic. There was a trite saying that a diagnosis of neurosis should be made only when definite psychogenic causes could be uncovered. That was a counsel of perfection. The art of psychiatry was to attempt an early evaluation of the symptoms presented by a patient. Although psychiatry recognized that a certain train of symptoms might lead to an end result which was labelled and classified, there had to be a fluidity of ideas concerning those symptoms. Schizoid, paranoidal, manic and depressive states, states of confusion, and even mental deterioration were not rigid entities, but might occur as a syndrome in many disorders of mind and body. Anyone might exhibit traits which needed only a little caricaturing to come under those headings. One of the traits mentioned might take charge of the individual under abnormal stress. For the sake of convenience a broader distinction was made between the psychoses and the neuroses. The apparent metamorphosis of the symptoms of the one type into those of the other was one of the difficulties with which the physician and the psychiatrist had to contend. Dr. Maudsley discussed the assessment of emotional symptoms in the pre-adolescent and post-adolescent periods of life and also psychological states in which feelings of unreality amounting to depersonalization were not uncommon. He also drew attention to the difficulties in the recognition of true depressive states, whether they were reactive or endogenous. He said that the modern psychiatrist had come under criticism because he had added to his therapeutic armament certain physical methods of treatment which appeared to be somewhat crude and empirical. Yet these therapeutic measures had given psychiatry a new outlook regarding emotional disorders previously looked upon with despair. There was a tendency for the modern physician to obtain the opinion of various specialists before arriving at a final conclusion regarding the significance of symptoms and signs. Modern psychiatry had developed team work of such a kind to a high degree. The psychologist, the social worker and the occupational therapist all added their quota to the psychiatrist's knowledge of the symptoms presented. At the same time it should be made clear to the patient that the psychiatrist was in charge of the situation, as it was necessary that he should maintain the *rapport* with the patient if he was to form an adequate picture of the real meaning of the symptoms.

Psychotic Self-Mutilation.

DR. R. S. ELLERY (Melbourne) discussed psychotic self-mutilation. He said that the most primitive people carried out self-mutilation, and there was hardly a race of men in which some form of mutilation was not practised. Generally mutilation occurred as part of a ceremony or as a specific adornment, or else as punishment inflicted by the community or indulged in by the individual. Prisoners and criminals often suffered mutilation. Martyrs had mutilated their flesh for religious reasons or had made themselves eunuchs for the Kingdom of Heaven's sake. Psychotics mutilated themselves when their sexual urges conflicted with their religious beliefs. Mutilation was a form of atonement for sin, although the sin might be committed in thought rather than in deed. Dr. Ellery gave many examples of that type of mutilation and discussed the psychological dynamics of such behaviour. The relation between suicide and self-mutilation was emphasized, and specific psychoses were referred to in relation to the type of mutilation likely to be effected.

[1] The meetings held by the Section of Neurology and Psychiatry with the Section of Obstetrics and Gynæcology, with the Section of Oto-Rhino-Laryngology and the Section of Ophthalmology, and with the Section of Radiology and Radiotherapy, have been recorded.

The subject was one which lay at the very basis of mental disorder, and which was related archaically to the customs of other and older races of men.

Psychiatry and its Ancillary Services.

PROFESSOR D. BLAIN (United States of America) read a paper entitled "Psychiatry and its Ancillary Services". This paper has not been made available to this journal.

Modern Methods of Psychiatric Treatment.

PROFESSOR W. S. DAWSON (Sydney) read a paper in which he reviewed modern methods of psychiatric treatment. He said that twenty years previously the title given to his paper would have provoked a discussion on the relative merits of the methods of Freud, Jung and Adler as therapeutic disciplines. At the present day the methods of another trio, Sakel, von Meduna and Moniz, awaited a more definite formulation of principles in their application to the relief of mental illness. Unfortunately the classes of patients who were being subjected to the newer physical methods of treatment were in general those suffering from conditions of obscure ætiology, lacking a demonstrable physical basis and apt to vary in severity according to changing external psychological or social conditions. These patients were the most numerous in the psychiatrist's professional clientele—those suffering from the so-called biogenic or functional psychoses or psychoneuroses. Delirium, dementia and subnormality (congenital mental defect) were conditions of a different order. Professor Dawson went on to say that the difference between treatment under voluntary conditions and under certification afforded a rough index to the severity and the duration of the morbid state at the time of the patient's admission to clinic or hospital. In general, the earlier and milder the condition the better the prospect of natural remissions and the higher the percentage of successes under any form of treatment. Only when the course of treatment was brief and when improvement followed quickly after its application could psychiatrists persuade themselves that treatment was in truth active.

Professor Dawson then described cortical stimulation, insulin coma and surgical procedures and discussed their application to clinical conditions.

Clinical Meeting.

A clinical meeting of members of the section was held and patients were shown by Dr. B. F. B. Stafford, Director of Mental Hygiene of Queensland, and Dr. A. Stoller, specialist in Psychological Medicine of the Repatriation Commission.

Section of Dermatology.

President: J. C. Belisario, C.B.E., E.D., M.B., Ch.M., New South Wales.

Vice-Presidents: B. B. Barrack, M.B., Ch.M., Queensland; R. Brodie, M.B., B.S., F.R.C.S., F.R.A.C.P., Victoria; H. Macmillan, M.B., B.S., F.R.C.S., Western Australia.

Honorary Secretary: A. J. Foote, M.R.C.S., L.R.C.P., Queensland.

President's Address.

DR. J. C. BELISARIO (Sydney) as his president's address read a paper entitled "Warts and their Treatment". He said that warts were of interest to the general practitioner, the surgeon and the physician as well as the dermatologist. Their behaviour in response to the various forms of treatment was difficult to understand. They could be extremely difficult to cure, and might be followed by unsightly cosmetic sequelæ and occasionally by malignant changes. In clinical appearance they occasionally closely resembled cutaneous carcinomata and other nodular, papular or keratotic conditions. It was desirable to try by coordinated research and experimentation to find more reliable methods of treatment than were available at present. Dr. Belisario then discussed eight clinical types of wart. The first type was the common wart, which occurred chiefly on the hands and fingers in the ten to sixteen years age group, and even under the nails. They might be single, few or many, isolated or grouped, and might disappear spontaneously. Digitate warts resembled a cluster of filiform warts, and occurred commonly on the face, neck, beard area or scalp; they might be damaged by a razor or comb and bleed easily. Filiform warts were mostly the colour of normal skin; they occurred most commonly round the neck, nostrils or eyelids in middle-aged people, mainly women. Plantar warts were similar to the common wart, except that they occurred on the soles of the feet and projected inwards instead of outwards, owing to pressure; tenderness might be present if nerve endings were involved. They had to be distinguished from callosities and corns. The mosaic wart was a multiple patchy lesion limited almost invariably to the sole, although occasionally it was found in an interdigital area. Juvenile flat warts occurred most commonly on the faces and hands in children. Acuminate warts were fungating in type, and occurred on the genitals, on the thighs and around the anus in both sexes. Turning to the ætiology of warts, Dr. Belisario discussed in some detail the arguments about the virus theory of origin, and said that in his opinion it was probable that all varieties of warts were manifestations of the same virus, the particular clinical type depending on environment, neuro-vascular influences, trauma, localization, and inherent susceptibility. With regard to treatment, Dr. Belisario said that the matter could best be discussed under nine headings. He therefore described psychotherapy (suggestion had been used successfully in a number of cases), oral, parenteral and local chemotherapy, immunization therapy, surgical treatment, the application of the cautery, diathermy, radiotherapy, and miscellaneous methods, and gave details of each type of therapy. Dr. Belisario said that painful treatments produced fewer cures than did X radiation. All the forms of oral, parenteral and local chemotherapy might succeed when others, such as irradiation and diathermy, had failed; but the percentage of cures obtainable by the use of those methods was far below what was desired. The value of immunization therapy had not been established beyond doubt. Surgical treatment could be used for all warts, but a keloid or painful scar might follow, particularly on the sole of the foot; also recurrence might take place. However, in some circumstances surgical removal with plastic repair was the method of choice. The application of the galvano-cautery or post-cautery was one of the most reliable treatments for warts, and the exact amount of tissue to be destroyed could be accurately judged. It was wise to combine the use of the curette with that of the cautery. Treatment by diathermy was also reliable, and its effect was similar to that of treatment with the cautery. However, it was slightly more likely to be followed by keloid formation or an hypertrophic scar, and also the amount of tissue to be destroyed could not be judged so accurately. Dr. Belisario said that after twenty years' experience of patients treated by X rays or radium, he confined the use of those agents to plantar warts, with rare exceptions, chiefly because of possible unsightly cosmetic effects and of possible late complications. Dr. Belisario then listed a number of treatments under the heading of "miscellaneous" and drew particular attention to a method fairly recently developed, with which he was having some success. A hole the size of the wart was cut in a piece of copper plate 0·5 millimetre thick or a piece of tin or lead foil 0·5 to 1·0 millimetre

thick, and the aperture was placed over the wart, which was then covered with "Meta" solid fuel (or gunpowder). The fuel was ignited and extinguished when the patient felt a slight sensation of heat; or the gunpowder was ignited with a glowing cautery point, and a quick flash was produced which caused no pain. The wart could either be peeled off with forceps at the time or allowed to fall off by itself in a day or two. Dr. Belisario thought that in addition to the psychological effect of such treatment, some other process might be set in train by the momentary heat of the flame.

DR. R. F. A. BECKE (Sydney) read a supporting paper on warts and their treatment. He dealt chiefly with the diagnosis and treatment of plantar warts, and made some reference to the treatment of common warts. He said that plantar warts might be confused with callosities, hard corns and neuro-vascular corns. Callosities were generally larger than warts, the epidermis was thickened in a uniform manner, and the unbroken papillary lines of the skin were clearly visible after swabbing with spirit or oil. Callosities were hard and usually manœuvrable over an underlying bony prominence, with or without the presence of an intervening bursa. The basic deformity that caused a callosity was usually evident. The hard corn was a callus with a central conical horny mass, and was located in relation to a bony prominence. A uniform corneous core was present, of opaque white colour and avascular. A hard corn was generally smaller than a plantar wart, and when it was located on a heel its true nature was often disguised by the thickness of the overlying epidermis; therefore paring down was of prime importance in diagnosis. The corn was apparently more painful than a wart, and radiation therapy was ineffective. The neuro-vascular corn was a vascular lesion, generally located under the first or fifth metatarsal head, sometimes on the plantar surface of the great toe. Pain was often severe. The lesions might be multiple and were small and of uniform size. Without permanent relief of pressure such corns were resistant to most forms of treatment. Dr. Becke went on to say that the treatment of warts in general would remain unsatisfactory until the nature of the causative virus was fully understood. For common warts, application of the galvano-cautery appeared to be the most successful single method of treatment. For plantar warts, conservative treatment was best if the patient was very young or elderly, having little tissue between the skin and underlying bone. Children's warts would often clear up completely with twice-daily "soaks" of 3% to 5% aqueous solution of formalin, aided by the use of 25% to 40% salicylic acid ointment applied three times a week. X-ray therapy could be used when that method failed. For elderly patients the formalin-salicylic acid régime was well worth a trial. Mosaic warts were not radiosensitive, and might be treated by the application of a salicylic acid plaster for one week with curettage of the macerated skin. The procedure was repeated weekly for several weeks, and then a 50% to 100% aqueous solution of silver nitrate was swabbed over the area every four or five days, with curettage as required. Dr. Becke then referred to radiation therapy. He said that experience had shown that X-ray therapy might effect a cure in at least 80% of cases; but in his opinion X-ray therapy was not suitable for the dry, friable, opaque lesion of long standing in an elderly person. X-ray treatment of the deeply situated wart in the thick skin of the heel required previous vigorous paring of the horny layer. Excision with plastic repair was a satisfactory method of treatment in some circumstances when X-ray therapy had failed.

DR. W. W. LEMPRIERE (Melbourne), in a supplementary paper, distinguished the following varieties of wart: (*a*) the common wart on exposed areas, (*b*) flat warts of the hands, (*c*) "mosaic" warts of the feet, (*d*) small filiform or digitate warts of the face and neck, (*e*) plantar warts, (*f*) seborrhœic and the closely allied senile warts, (*g*) venereal warts, not to be confused with the condylomata of syphilis. Not all warts were of the common or innocent variety; they might appear at any age and persist for years. In the treatment of warts experience played a leading part. The type of wart, its situation, the texture of the surrounding skin, the age and general condition of the patient and the effects of any previous treatment had all to be considered. Methods of treatment might be physical, chemical or radiological. Sometimes a number of so-called successes might in all probability be due to suggestion. Dr. Lempriere discussed shortly the methods of treatment. He described physical methods, which might be preparatory or destructive, and chemical methods, which were intended either to destroy the wart or to make the skin a less suitable site for the growth of warts. The use of radiological methods should not be lightly undertaken without experience, and it was not to be lightly disregarded. Dr. Lempriere discussed the application of X rays in some detail and made particular reference to plantar warts. He also mentioned the use of radium and the preparation for radium treatment which included the use of Upton's paste. He concluded his remarks with the statement that there were enough complexities in warts to warrant the cooperation of all concerned.

DR. W. C. I. UPTON (Adelaide) said that over many years he had not been able to satisfy himself that internal treatment was of any value. His own name had been mentioned with regard to Upton's paste; he had used it in the air force and still did so. Dr. Upton then showed specimens of warts removed by that method.

DR. A. BURROWS (Sydney) said that he had been dealing with warts since the very early days, when the virus infection as a cause was first established. He stressed the efficacy of suggestion in the treatment of warts. He believed that the best way to cure warts was with X rays or radium. If that failed they should be removed surgically. With regard to radiation therapy, Dr. Burrows thought that some people used too big a dosage. He believed that warts were either radio-sensitive or not. If radiation therapy did not achieve success, it should never be repeated. Surgical treatment was then indicated and it would probably be found that the wart had a large root. Dr. Burrows said that he used either radium or unfiltered X rays. He agreed that the use of the cautery was as good a method as any. Diathermy was useful, but if used too deeply was apt to leave a painful scar.

DR. IVAN WARTZKI (Melbourne) mentioned the seborrhœic wart and its cause. He said that he had been taught that the term was a misnomer, the condition having nothing to do with seborrhœa and not really being a wart. He had been taught that it was a nævus which developed late in life. Dr. H. W. Barber had believed in early days that warts were nævi appearing late in life; his present belief was that they were due to a virus, the common factor with seborrhœa being the influence of hormones. He had suggested treating some of the patients with œstrogen to counterbalance the androgen predominance. Dr. Wartzki said that he had a large percentage of cures in digitate warts of the scalp with trichloracetic acid.

DR. A. J. DAY (Melbourne) said that all the speakers had admitted more or less to failure in the treatment of warts. In Melbourne they had tried a control series of patients with suggestion therapy with about 20% or 30% cure. Feeling that there might be something wrong with his (Dr. Day's) technique of suggestion, a colleague had carried out a second series. His results had been much the same as Dr. Day's. Dr. Day said that they used local applications of formaldehyde 40% with some success. Corrosive agents like trichloracetic acid should not be given to the patient to use himself; they could easily produce ulceration by inexpert application. They used X rays, of course, and believed that such treatment produced a larger percentage of cures than any other method. The dosage used varied between 1800*r* and 2000*r*. With diathermy they preferred the monopolar method. In conclusion Dr. Day said that he believed that success was obtained by the use of an effective killing agent to the base of the wart, whatever the method employed.

DR. R. B. PERKINS (Sydney) said that he had tried unfiltered X rays (600*r* to 800*r*) with unreliable results. He had found plain curettage without the use of diathermy

or cautery the method of choice for the treatment of common warts.

DR. J. M. O'DONNELL (Perth) said that he did not agree with Dr. Lempriere as to the lack of good results by the use of nitric acid and carbolic acid. His experience was that such treatment was fairly satisfactory, particularly for warts on the hands.

DR. J. H. KELLY (Melbourne) said "many men, many cures". Many good reputations had been lost in the treatment of warts, but none could be said to have been made. The methods in use varied, the caustic agents being a matter of choice. He had noticed the luxuriance with which warts flourished on the hands of the nail-biter. Such people were usually subject to dermatitis, and they usually had hyperidrosis of the palms also. Mention had been made of the presence of plantar warts on the feet of elderly people. That was essentially a disease of young people who had moist sweating soles. In people over the age of forty years the diagnosis was more than suspect. Irradiation should not be used on the hands or nail folds.

DR. C. F. ROBINSON (Sydney) thanked Dr. Becke for stressing the fact that the most important factor in the proper treatment of plantar warts was the correct diagnosis.

Psychosomatic Dermatoses.

DR. J. H. KELLY (Melbourne) read a paper entitled "Psychosomatic Factors in Dermatology". He said that modern medicine required a total appraisal of the patient and his problem, from the psychological as well as the physical aspect. Some preparation in the principles of psychopathology and psychotherapy was necessary to a dermatologist, who should explore the psychic content of the situation. Dr. Kelly emphasized that there must be no diminution of interest in the physical appreciation of the dermatosis. He advised the dermatologist to estimate the personality type of the patient in a general way and to continue his inquiry into immediate rather than remote emotional disorder, and to assess the importance and relevance of the factors concerned. If the patient showed evidence of pronounced personality deviation or had a history of prolonged emotional tension, he should be referred to a psychiatrist. Dr. Kelly then reviewed the allergic approach in dermatology in relation to psychic factors, and presented some of the indications of the existence of emotional factors in dermatitis. He also discussed infantile dermatitis and occupational dermatitis from the standpoint of psychic influences.

DR. A. J. M. SINCLAIR (Melbourne) read a paper entitled "Psychological Aspects in Dermatology". He said that his role as a psychiatrist was merely to emphasize another facet in the concept of total medicine; human illness was now regarded as a disorder of the total organism, which reacted in sickness and health to multiple stimuli—physical, chemical and emotional. The skin was a sensitive boundary line between the inner and outer world of each subject. The psychological importance of the skin surface's exposure to the gaze of other individuals was a most significant stimulus. The skin reacted as an organ of expression, visibly expressing the physical state and the inner mental state. The skin acted as a highly sensitized screen, upon which was faithfully revealed almost every emotional change arising within the individual psyche. From their earliest days all individuals formed a mental picture of themselves in relation to other individuals in the environment. This dynamic assessment of self, together with what the subject assessed to be his physical image, was inextricably interwoven into what might be called his personal identity. It followed that an important regulating factor was the physical status of the individual as seen by the outer world and in the mirror. In that respect general bodily configuration was of great importance, particularly the structure, colour, continuity and regularity of the skin surface. It was therefore reasonable to expect that the skin, as well as acting as an organ of expression in the so-called normal mental state, would accurately express a mental state of conflict. The principles underlying the somatic expression of emotional conflict were three: (i) An unconscious mental conflict expressed its incompatible components in some way which ensured that such mental material would emerge from the unconscious mind in a form acceptable to the conscious mind. (ii) Through somatic or neurotic expression of a conflict a solution to the conflict would be achieved. (iii) The somatic expression of a neurotic conflict often brought about a physical state which, by its presence, allowed of some gain to the subject in the direction of solving his conflict. Dr. Sinclair went on to discuss the bearing of his introductory remarks and mentioned the following amongst other conditions: the association of mental depression with neurodermatitis and the question of unconscious guilt; inwardly turned aggressiveness in some cases of hypertension in which uncontrollable scratching or the plucking of hair, eyebrows and eyelashes was observed; the role of the skin as a vast erogenous zone and the significance of ticklishness, of irritation or scratching of the skin and of pruritus in many cases. Dr. Sinclair then briefly discussed investigations reported by other workers, notably by Wittkower on psoriasis and on seborrhœic dermatitis, by Heilig and Hoff on *herpes labialis*, by Jadassohn, Salk, Stokes, Pillsbury, Kulchar and others on urticaria (other workers in that field being Saul and Bernstein), and by Brunner on the effect of emotional stimulation in the production of acetyl-choline. Dr. Sinclair concluded his paper by saying that it would be a long time before the psychiatrist had sufficient reliable data to allow him to define clearly the role of emotion in the dermatoses. Corlis had stated that the psychosomatic study of a dermatosis embodied all that was best in routine dermatological and psychiatric care, each problem being approached from two aspects: (i) the elucidation of the basic personality pattern; (ii) an attempt at correlation of the onset and development of the present illness with stresses, strains, traumatic events and mental conflicts. Dr. Sinclair suggested that that was an approach which should apply in all human illness; all medical men were preoccupied with one basic problem—the study and treatment of each patient as an indivisible totality.

DR. ADRIAN JOHNSON (Sydney) discussed the psychosomatic aspects of dermatology. He began his paper with the quotation: "A man can weep with his skin as well as with his eyes." He said that dermatology was unique in that only a minority of its diseases could be proved to be of organic origin. Psychosomatic medicine, as far as skin disease was concerned, was in its infancy. Wittkower had stated that it was not possible for one person to cover the psychopathology of psychosomatic skin disease from his own experience. All dermatologists did not subscribe to such a view. Dr. Johnson quoted the views of different authors who held conflicting views on the subject. After referring to some of the extremist views on the absence of a psychosomatic aspect of skin disease, he pointed out that it was necessary not to lose sight of the organic cause of disease. He instanced a woman who was subjected to extensive psychoanalysis for *pruritus vulvæ*, but who was cured by the practitioner who discovered a trichomonas infection. He gave a long list of diseases in which psychosomatic factors were held to play a major part, and also referred to Wittkower's conception that many patients were constitutionally predisposed to skin diseases and were by character the subject of mental conflict. Such persons might escape by flight into skin disease when a further mental strain was added in the form of some particular emotional conflict. Dr. Johnson referred to a case which illustrated the interrelationships of physical and psychic factors in the causation of some dermatoses. He quoted the following points stressed by Gillespie. (i) The skin is an organ of emotional expression, reacting normally to feelings of anger, shame and fear. (ii) It is second only to the genitals as a source of sexual excitement. (iii) It is more liberally supplied with pain afferents than any other organ. (iv) The skin and its appendages have a social importance connected mainly with self-decoration and display. (v) A lesion on the skin, whether occurring as an artefact or as a disease *sui generis*, can be used as

a means of gaining attention and sympathy or as an expression of hypochondriacal tendencies.

DR. J. J. WITTON FLYNN (Sydney) read a paper entitled "Some Notes on Functional Skin Disease, with Special Reference to it in Repatriation Practice". He said that many dermatoses were of unknown origin, and therefore dermatologists might diagnose the condition as functional because they could not determine the organic cause. The patient had to be considered as an individual with a disease, and not on the basis of disease occurring accidentally in an individual. Skin diseases fell broadly into four groups, according to the gradation of functional element present in them. (i) Skin diseases, whatever their cause, would irritate the patient and influence his mental attitude (for example, chronic furunculosis or scabies). (ii) Certain diseases, at present of unknown origin, might have a number of causes working together with a varying degree of functional element (for example, dysidrotic eczema, *lichen planus* and *dermatitis herpetiformis*). (iii) In a further group of skin diseases the nervous element was of paramount importance (for example, dry and exudative neurodermatitis, *lichen Vidal* and pruritus). (iv) Certain skin diseases might result from the patient's psychoneurotic make-up (for example, acrophobia, cleanliness mania, and neurotic excoriations). Dermatologists differed considerably in the amount of stress they laid on the functional element in skin disease. Two factors were responsible for functional disease: (i) inborn instability or constitutional element, (ii) environmental or precipitating factors. In the case of repatriation practice a third factor was added: free treatment for their skin condition, with perhaps a varying amount of pension for any incapacity caused by their disability. The final decision of acceptance of such a condition as due to war service rested with a board of lay people. It was well known that a worker whose injury or dermatosis came under the *Workers' Compensation Act* took much longer to be cured and fit for work than patients not so covered. The same applied in repatriation practice, with dermatoses in general and neurodermatoses in particular. Among patients and lay persons the idea was common that if a skin condition had occurred first in New Guinea it had been brought about by some tropical cause and was therefore much less amenable to treatment. Dr. Flynn presented some clinical histories to illustrate his remarks. He also mentioned a kind of neurodermatitis often found in tuberculosis patients, consisting of localized excoriations of the scalp, sometimes secondarily infected. He pointed out that such patients had to rest for long periods and became worried over their financial position and became bored. They became introspective and observed minor skin changes with great anxiety. Dr. Flynn finally said that in many of the cases described the patients were probably not aware of their conflicts and difficulties in adjustment, and had no proper insight into the mechanism of production of their symptoms.

DR. F. C. FLORANCE (Sydney) said that he thought the crux of the situation had been stated by several sentences of the various speakers. Dr. Kelly had said that there was a psychic component in every disease situation. Dr. Sinclair had said that an unconscious mental conflict expressed itself in such a way that it was acceptable to the conscious mind, and Dr. Johnson had put it in the following terms: "Overdrawn at the bank of nervous energy with the lesions as material security for the overdraft." Dr. Florance went on to say that most of his patients during the war had been women suffering from the strain of having a husband or son in the forces, who had thus overdrawn their nervous energy accounts. As there were aggravating factors in peptic ulcer, such as ingestion of alcohol or condiments, so there were in such dermatoses as dyshidrotic eczema.

DR. W. W. LEMPRIERE (Melbourne) said that one of the most interesting groups of patients he had examined were the ex-servicemen at the Repatriation General Hospital, Heidelberg. He thought that the sympathetic approach could go a long way to meet psychosomatic requirements. As King Solomon had put it, "a kind and understanding heart above all things". The majority of such patients had been relieved of the anxiety of proving that their skin condition was due to war service by a kind government and its repatriation policy. On the other hand, in many instances their skin troubles arose from present anxieties. Of course, one came across frank malingerers, who were exactly the same nuisances that they had proved to be during their time in the forces. They did not represent the average repatriation patient. Most seborrhœic patients had thin skins in more ways than one, but the most difficult problem he had had was presented by a yokel from Tasmania who seemed to be made entirely of wood.

DR. C. F. ROBINSON (Sydney), referring to Dr. Sinclair's paper, said that he could not understand psychiatric terminology. He had complained of that fact to a Sydney psychiatrist, who had replied: "You're not expected to." Dr. Robinson urged those present to beware of the "double-decker" patient, especially sons accompanying their mothers, who royally announced: "We have not enough ointment."

DR. G. SPRINGTHORPE (Melbourne) said that the approach to the subject had shown a great breadth of vision. He had only one question to ask: What type of hypnotics did dermatologists prefer to break the vicious cycle of itch and insomnia? Dr. Springthorpe had seen patients suffering from irritable conditions greatly helped by a week or two of narcosis.

DR. J. C. BELISARIO (Sydney) said that he had been particularly impressed by Dr. Kelly's repeated statement that care should be taken to exhaust all other possibilities before making a diagnosis of psychosomatic dermatosis. Dr. Belisario had two questions to ask. It had been suggested that periaxillary dermatitis was a result of anxiety factors; did that imply that anxiety factors were the only ones to produce periaxillary dermatitis? Dr. Belisario had found that dyed materials of soft and silky texture had caused irritation, proved by a patch test to be due to dye. The second question was whether the term atopy should be abandoned. Dr. Belisario went on to say that in regard to patch tests, he remembered Dr. O'Donovan demonstrating a patient who reacted to patch tests with everything including normal saline. Dr. Belisario had been interested by Dr. Johnson's presentation of the recording of a history-taking; he had not seen that method used before.

Dr. Witton Flynn, in reply to Dr. Kelly's statement about the "flowers that bloom in the spring", said that in Sydney dermatologists thought that the seasonal relief of psoriasis during the summer was due to the influence of ultra-violet light on the beaches. With regard to infantile dermatitis, he agreed with Dr. Kelly; he usually treated the parents before the children. Dr. Flynn thought that the diagnosis of chrome dermatitis should be eliminated and the term periaxillary dermatitis used. The most important factor was hyperidrosis. He had an international footballer and a cricketer as patients, both "free sweaters", who had never seen khaki.

Dr. Belisario said that he had one other question to ask Dr. Kelly, concerning sudden death in infantile dermatitis in the absence of pathological causes. It was rare, but it did happen. He had read that it could be prevented by the removal of ointment, which usually covered the entire skin of the baby, for some hours in each day to allow for respiration through the skin. Dr. Belisario said that since adopting that procedure he had had no further cases of sudden death.

Dr. Sinclair, in reply, said that he thought Dr. Lempriere's method of sympathetic approach very important. No patient would respond kindly to brutal and frank exposure. With regard to Dr. Robinson's remarks on terminology, Dr. Sinclair thought that terms which could not be understood by the rest of the profession should not be used.

Dr. Kelly, in reply, said that he believed that hyperidrosis was the main factor in periaxillary dermatitis, and that any sensitivity to an external agent was superadded. It might occur without any demonstrable sensi-

tivity. He agreed that the term "atopy" should be abandoned. In reply to Dr. Springthorpe's question about sedatives, Dr. Kelly said that he believed that phenobarbital was contraindicated; chloral was the sedative of choice. He avoided the use of bromide. Sometimes insulin therapy was of value. "Somnifaine" was effective, but dangerous in inexperienced hands. He had used "Sodium Amytal" given intravenously or "Avertin" given *per rectum* to afford several hours of continuous sleep, as he agreed that the need for rest in some cases was of paramount importance and that rest must be achieved by some means. In reply to Dr. Flynn's objection to the "flowers that bloom in the spring" theory, Dr. Kelly said that he was referring to the broad field of dermatoses, not specially to psoriasis. It was difficult for one untrained in psychiatry to evaluate properly what was called the "manifest content" of a case. Dermatologists must not be misled by the patient's point of view. One could not expect to get results from "snap" questions such as: "Have you any worries?" Dr. Lempriere's sympathetic attitude must not be allowed to interfere with a proper attitude of detachment.

Section of Obstetrics and Gynaecology.[1]

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Honorary Secretary: Roy Hemsley, M.B., B.S., Queensland.

President's Address.[2]

DR. F. A. MAGUIRE (Sydney) took as the subject of his presidential address the problem of pelvic pain. He said that pain was a sixth sense with its own nerve endings, nerve fibres, tracts and brain centres. Superficial pain was bright, pricking pain or burning pain, while deep or visceral pain was dull and aching. The pain receptors were naked nerve endings in the deeper skin and in the organs and tissues. The nerve fibres were divided into three classes: Class A, large, myelinated and fast-conducting fibres for sharp pricking pain; Class B, small, slow-conducting myelinated fibres for burning pain; and Class C, unmyelinated, slow-conducting fibres for visceral pain. The nerve cells were in the posterior root ganglion. There were three relays of nerve fibres from the organ to the thalamus. From there the pain sensation was sent to the cortex for interpretation and action. There was a threshold of pain where it was just perceived. There were 22 steps or increments from that threshold to intolerable pain. Every two steps formed one unit of pain or one "dol". The pain threshold was probably the same in all healthy normal people, but might be raised or lowered by emotions, ill-health, temperament or drugs. Hyperalgesia and referred pain were due to an overflow of impulses in the cord segments affecting neighbouring sensory root areas. Pain reactions followed patterns; sharp, pricking pain exhilarated and stimulated the subject to fight or flight; visceral pain was dull, aching and depressing and caused nausea and inactivity—the subject wanted to rest, not run. Dr. Maguire described in full detail the pain pathways from the various pelvic organs, together with the corresponding areas of referred pain. He discussed the special sensation of the pelvic organs and structures, and described a special "three position" method of pelvic vaginal examination. He finally outlined the treatment and relief of pain and the indications for the surgical relief of pain, and discussed the place of psychosomatic pain in the pelvis.

DR. G. G. L. STENING (Sydney) said that Dr. Maguire's theoretical considerations of pelvic pain helped to clarify the question of diagnosis. When his remarks were translated to the clinical field of every-day application, one could be aware of the effect of direct pain. That was when sensory nerves were present in the area in question, such as vulva, perineum, or perhaps an abscess pointing in the abdominal wall. There were also more commonly the effects of referred pain. Referred pain was unconsciously, from a surgeon's student days, associated with the scheme of distribution. The area in which pain was felt was inspected and examined to discover any local cause first. Then, since its nerve supply was known, attention was directed to the segmental innervation of the viscus which could be the prime excitor. In this way a diagnosis was made.

It was well to remember that gross disease in the pelvis, in the uterus and its appendages did not always provoke pain; for example, large fibromyomata of the uterus or ovarian neoplasms of considerable size might not produce pain. But practically all pelvic pain had an origin in some pathological condition. Even chronic and incapacitating pain might be present in cases in which it was difficult to determine a lesion. In the history the character of the pain was determined—whether it was mild or severe, when it occurred, and whether it was sharp, dull or colicky in type. Also pelvic pain might have a starting point from parturition or abortion or intercourse, arising from infection or pelvic damage. It might be aggravated during the menstrual cycle. It might be unrelated to the conditions named and be the result of pressure from a benign or malignant tumour. Constipation could also aggravate pain. With irritation of the peritoneum, pain could be produced almost invariably with accompanying signs and symptoms. In this category, Dr. Stening mentioned inflammations, perforations, torsions and hæmorrhages.

Acute colicky pain might arise from volvulus, hernias and obstructions; from biliary colic, renal colic and from tubal and uterine conditions; but rarely from medical conditions such as lead poisoning and gastric crises due to syphilis.

Dr. Stening dealt with several matters of clinical interest. He said that in many cases a diagnosis of ovarian or tubal inflammation was made on account of abdominal pain in the tubo-ovarian areas, or a diagnosis of chronic appendicitis on account of right-sided abdominal pain or discomfort. Tubo-ovarian inflammations, tubal pregnancy and ovarian neoplasms, especially if undergoing torsion or malignant change, or even cystic distension in an ovarian follicle or *corpus luteum*, could all cause pain in one or both iliac fossæ. Chronic cervicitis could also produce pain in the iliac fossa, especially when there had been associated damage at childbirth. Sometimes tubal inflammation existed with cervicitis. Treatment of the cervicitis which resulted in healing of the lesion cured the pain. In a few cases in which other methods failed to produce relief, Dr. Stening had found effective local anæsthesia or the injection of alcohol (85%) to block Frankenhäuser's plexus. He went on to discuss the question of primary dysmenorrhœa. In severe cases after the use of appropriate medical treatment by analgesics and perhaps endocrine preparations, dilatation of the cervix to destroy the intracervical plexus was used. He thought that

[1] The meetings held by the Section of Obstetrics and Gynæcology with the Section of Neurology and Psychiatry, with the Section of Pædiatrics, and with the Section of Anæsthesia have been recorded.

[2] Owing to Dr. Maguire's absence through illness his address was read by Professor B. T. Mayes.

dilatation up to size 10 or 12 Hegar's dilators should take 15 minutes or longer, so that no splitting or tearing of cervical tissue occurred. The prolonged effect of leaving each successive dilator *in situ* for several minutes was a necessary and important part of the procedure. Such a dilatation would often give relief, sometimes temporary, sometimes permanent. In the more severe cases the value of presacral neurectomy had been established. At the same time a dilatation and curettage should be done and any pelvic lesion corrected. Although Dr. Stening had experience of only ten such cases, he was very satisfied with the results. He thought that the indications for presacral sympathectomy should be extended. Presacral neurectomy was a valuable adjunct in the treatment of endometriosis. He had found it of value also in cases of persistent pain in the lower part of the abdomen when no relief had been obtained from repeated abdominal section. Presacral neurectomy had a small place in the treatment of carcinoma of the cervix. When the condition was inoperable, pain was due to extension of the growth to the sensory nerves on the side wall of the pelvis, and presacral neurectomy could produce no relief from pain.

DR. D. QUINLAN (Perth) drew attention to the fact that a broad outlook on the complaint of pelvic pain was essential; extragenital lesions were of considerable importance, and primary pain in the back was rarely associated with inflammation of the pelvic organs. Dr. Quinlan made a plea for conservatism in the treatment of the female pelvic organs. He said that when any surgical procedure was undertaken, three cardinal points should be raised: (i) Should an operation be performed, and if so, why? (ii) If operation was performed, what procedure should be used, and why? (iii) Would the operative treatment under consideration cure the pain? In cases of chronic cervicitis the use of a speculum would reveal more than touch. The infection should be removed, and if the pain persisted, relief might be obtained by injecting Frankenhäuser's plexus with "Proctocaine". The new classification of spasmodic dysmenorrhœa into three types—uterine, ovarian or mixed—was helpful. The indications for operation were rare; conservatism must be observed, as the individual threshold of pain varied. Severe pain of a colicky nature might be relieved by presacral neurectomy or by division of the ovarian nerve supply. Dr. Quinlan said that he had had no experience of chordotomy or of the injection of alcohol. Pelvic neurosis was an important question and was often due to marital disharmonies. Backache was a problem in which the gynæcologist needed the assistance of the neurologist and the orthopædic surgeon.

DR. W. K. MCINTYRE (Launceston) said that the type of dysmenorrhœa which occurred at the onset of menstruation was often relieved by dilatation and insertion of a stem pessary for four or five days.

DR. ELLA MACKNIGHT (Melbourne) referred to one patient with intractable pain after Wertheim's operation, which had been completely relieved by chordotomy.

DR. C. A. THELANDER (Brisbane) advocated the use of cervical dilatation with a 10 Hegar's dilator, and then packing of the uterus with gauze for four days. He stressed the difference between physiological and psychological thresholds for pain.

DR. H. FURNELL (Melbourne) said that in spite of Dr. Maguire's excellent paper, a large number of questions on pelvic pain still remained unanswered. The pelvis was a region which knew no anatomy. He asked why an ovarian lesion produced lower abdominal pain in one patient and renal pain in another. He believed that more knowledge would be gained if more careful observations were made by gynæcological surgeons. He disagreed with Dr. Maguire that the uterus was a sensitive organ.

PROFESSOR J. W. JOHNSTONE (Melbourne) considered the relief of pain by summation of drugs with different actions an advantage. He asked if anyone could tell the results of ovarian function after the division of ovarian nerves. He advocated the use of the Gräfenburg ring for spasmodic dysmenorrhœa. He said that anovulation produced by stilbœstrol was a test for the psychosomatic origin of pain. That anovulation could be further controlled by temperature charts. Professor Johnstone drew attention to "Simpson's pain", a peculiar type of pelvic pain pathognomonic of carcinoma of the body of the uterus, which was present in one-quarter to one-third of all cases, if sought. The characteristics of the pain were its periodicity—it was a dull pain recurring usually between 2 p.m. and 3 p.m. each day—and the fact that it was relieved by rest but recurred. Its ætiology was unknown, but it might be due to cervical obstruction.

DR. C. F. MARKS (Brisbane) asked if the inadequate height of washtubs might be a factor in backache.

PROFESSOR BRUCE MAYES (Sydney) said that he was interested to know the types of labour experienced by patients previously subjected to presacral neurectomy. He felt that the cause of labour pains might be elucidated if such patients were followed up, and he asked for the cooperation of the audience in notifying him of such cases.

Dr. W. K. McIntyre reported one patient who had undergone presacral neurectomy and who had a normal labour with ordinary labour pains.

Toxæmias of Pregnancy.

PROFESSOR F. J. BROWNE (London) gave an address on the toxæmias of pregnancy. He said that the subject was important because eclampsia was the most common cause of maternal mortality: sepsis had previously occupied this position, but at least in England it now held third place. Eclampsia was almost certainly a preventible disease, especially if diagnosed and treated early.

Professor Browne classified the manifestations of eclampsia into three groups: (i) Preeclampsia (most common, 70% of all forms of toxæmia). (ii) Essential hypertension (25%). (iii) Chronic glomerular nephritis (5%).

Preeclamptic toxæmia, unlike eclampsia, was not diminishing in frequency. Not much was known about its ætiology in spite of extensive research on the subject. Somehow or other Professor Browne felt that the adrenal cortex was connected with preeclampsia and there was some queer association with vitamin *B* deficiency. This had been shown in Hong Kong, where beri-beri was endemic. In Hong Kong eclampsia was fifteen times as common in women with beri-beri who were pregnant as it was in those who were not pregnant. Also it had been shown by experiments in America that change in the kidney could be brought about by diets deficient in the vitamin *B* complex.

Discussing early diagnosis, Professor Browne said that there were three cardinal signs—œdema, hypertension, albuminuria. Œdema was often the first sign and might be occult as shown by an abnormal increase in weight (over two pounds per week or five pounds per month) or by clinical œdema. There was reason to believe that œdema was an important factor in the causation of eclamptic convulsions. According to Professor Browne's conception, œdema caused brain anæmia, and this was a stage when cells were over-susceptible and convulsions occurred. Therefore, control of the œdema was important. Œdema was not always the earliest sign—sometimes hypertension came first. In pre-natal work some patients were found to have a blood pressure of 160 millimetres of mercury or more without either kind of œdema. Whatever the cause of hypertension, it was not œdema, but œdema could increase hypertension. Professor Browne admitted that he had queer ideas on hypertension which were supported only by Dr. Barnes of London and Professor Bruce Mayes of Sydney. Physicians held that hypertension was present when the systolic blood pressure was 160 millimetres of mercury and over, but he thought that hypertension could be said to be present with readings over 120 millimetres of mercury, systolic, and 80 millimetres, diastolic. He had been influenced by Robinson, who had pointed out that patients with persistent blood pressures of over 120 millimetres of mercury, systolic, and 80 millimetres, diastolic, ultimately developed hypertension. Of these people, 45% were hypertensive.

Albuminuria was always the third sign to appear and it often appeared long after hypertension. Why was it the latest? As far as was known the cause was spasm of afferent arterioles of the glomerulus which temporarily cut off the blood supply to the glomerular capillaries so that they were anoxæmic. The wall was injured so that protein leaked to the tubule. Clinically this occurred only when the systolic blood pressure was about the critical level—160 millimetres of mercury. Professor Browne disliked the term albuminuria of pregnancy and preferred preeclamptic toxæmia because albuminuria was a late sign and might never appear at all. Owing to early diagnosis the incidence had been reduced in the previous few years. Albuminuria meant albumin in a catheter specimen of urine.

In regard to treatment the question arose when the patient could be treated as an outdoor patient. The answer was: if the blood pressure was below 150 millimetres of mercury, systolic, and 100 millimetres, diastolic, and if there was no albumin in the urine. It was important to control the blood pressure and the œdema—nothing else mattered very much. Why had blood pressure to be controlled? Because hypertension caused convulsions—hypertensive encephalopathy—in the same way as œdema caused convulsions. Byrom, of Sydney, used a clamp in rats and produced hypertensive encephalopathy and subsequent convulsions in every case.

There was no better remedy than to advise the patient to rest with the feet up. It was usual to advise sodium restriction to control the œdema. Most people ate 15 grammes of salt each day and so moderate salt restriction to five grammes per day was obtained by the omission of salt in cooking and of additions at table. The patient should always be seen again in a week at the longest; the condition might become very serious in a fortnight.

When was outdoor treatment not safe? When the blood pressure was over 160 millimetres of mercury, systolic, and 100 millimetres, diastolic, or if albuminuria was present, no matter what the blood pressure was. Why? Because it showed that the blood pressure had been up to a critical level, but might on this reading be on the down grade; blood pressure was very labile. The blood pressure would rise again if the patient was not carefully treated.

In many hospitals the patient was admitted for œdema or abnormal increase in weight alone. This had been done in the Johns Hopkins Hospital many years before. The best remedy was rest and the blood pressure usually fell to a safe level when the patient was in bed. How long should the patient be kept in bed? Till the blood pressure was well below the danger level. She should be allowed up and around the ward, but should never be allowed to go home until delivered. The best way to control œdema was by salt restriction—it was the sodium ion which mattered as it held fluid in the tissues. Restriction of sodium bicarbonate, stomach powders and "Kruschen Salts" were just as important as restriction of common salt. Rest itself was a good diuretic as fluid came from the extremities to the kidneys and was excreted. Rarely was anything else necessary. Professor Bruce Mayes used a rice and water diet, but in England rice could not be obtained. If œdema was massive, 50 millilitres of a 50% glucose solution should be given every six hours by the intravenous route. Another good diuretic was ammonium chloride, 15 grains given three times a day. Mercurial diuretics were very dangerous. Was there any other reason why hypertension should be controlled? It might kill the fœtus *in utero*. How and when did it do this? Albuminuria was caused by spasm in the afferent arterioles of the glomerulus and resultant leak of protein to the tubule took place. At the same time spasm occurred elsewhere in the body, especially in the spiral arteries of the decidua, and as a result the blood supply of the capillaries which the artery fed was cut off. The spasm was relieved, the blood flowed again and the injured capillary wall gave way and bleeding occurred. The retroplacental hæmorrhage almost always killed the fœtus. Death of the fœtus was not due to toxic substances in the blood, but to the same cause as albuminuria. The fœtus was more likely to die *in utero* if albuminuria was present and also if the systolic blood pressure was over 160 millimetres of mercury. Therefore all treatment should be directed at keeping the blood pressure below the critical level of 160 millimetres and at getting rid of œdema. Œdema raised the blood pressure itself.

In the matter of diet vitamins *A* and *D* as well as the *B* complex were important. Vitamin *B* did not cure the patient as the changes were irreversible. Professor Browne said that he wished to see the vitamin *B* complex used as a prophylactic measure.

It was advisable to estimate the serum protein content at the beginning of treatment and once or twice during treatment because a low serum protein level might be the cause of œdema if the level fell below the critical level of five grammes *per centum*. In Brisbane with considerable heat in summer women did not eat much protein. Hypoproteinæmia was common in Brisbane, and therefore it was important to estimate blood serum levels.

Blood pressure estimations should be made twice a day and if albumin was present in the urine a catheter specimen should be examined once a week for albumin. The fundus of the eye should be examined at the beginning of treatment and once a week afterwards, because albuminuric retinitis was always an indication for immediate termination of pregnancy by Cæsarean section. No other method was quick enough. Many of these patients went on to term and produced a living child, but sometimes there might be an indication for premature interruption of the pregnancy. There were three indications. The first was when the patient seemed to be heading for eclampsia and the blood pressure was uncontrollable. In the second place, if albumin in the urine increased and blood pressure was uncontrollable there might be a danger of fœtal death. The third indication was less definite—if the high blood pressure had lasted for more than four weeks, then the patient was very liable indeed to acquire chronic vascular hypertension after delivery. Termination might help to prevent this. If possible the pregnancy should be continued to the end of thirty-seven weeks because the baby had then almost as good a chance of survival as at term. That was not always possible, and at about thirty-two weeks the decision was very difficult indeed as the fœtus might die if the pregnancy was allowed to continue and, if delivered, the fœtus might not survive. There were few methods available to help in the continuation of the pregnancy. "Veratrone" in small doses every four hours day and night might keep the blood pressure down. Venesection was of only temporary value and had no practical use. It was better to sacrifice the child of a young woman than to create the risk of chronic hypertension and the possible loss of the fœtus.

Termination of pregnancy might be by Cæsarean section or by the induction of premature labour.

The advantages of Cæsarean section were that it was sure and produced the least possible trauma, which was of importance with a premature baby. That was, however, not the whole answer to the problem. A baby might be delivered alive and breathe and in a few hours or days might die of atelectasis. The reason for this had been puzzling until Barcroft showed that *in utero* fœtal respiration was inhibited by the higher cerebral centres and that the inhibition was removed by asphyxia during normal labour. A baby delivered by Cæsarean section was not asphyxiated during delivery and therefore the inhibition was not removed. These babies could be helped by the aspiration of mucus from the air passages, if possible before breathing occurred. Foreign material should be removed with a mucus extractor and then the baby should be held up to remove mucus from the lower passages. By this means Russ had reduced his mortality from 8% to 2%.

The induction of premature labour should not be used until the thirty-fifth week, as prior to that time there was a grave danger of cerebral hæmorrhage due to asphyxia. Morphine should never be given to the mother of a premature baby and a wide episiotomy should be done to take off all pressure of the vulval ring. Forceps should be applied early.

Discussing the treatment of eclampsia, Professor Browne said that the patient should always be nursed on the side

because of the danger of the inhalation of foreign material and resultant septic pneumonia from which the patient might die in two or three weeks. Morphine was still a standby. Stomach washout was not used unless the patient had had a full meal shortly before the convulsive seizure. The place of Cæsarean section was limited. Medical treatment should be the order of the day. Cæsarean section had a place in fulminating eclampsia not controlled by medical treatment. A paper by Dewar and Morris in 1927 had called attention to the use of "Avertin" given *per rectum*. Professor Browne had used paraldehyde, but lately he had become dissatisfied and had used "Avertin". Dewar and Morris had lowered their mortality from 20% to 4%. When the fits were controlled the pregnancy should be terminated within three or four days unless the fœtus was dead. There was no need to terminate pregnancy if the fœtus was dead, as the patient would recover. The best treatment was usually Cæsarean section.

Discussing the remote prognosis, Professor Browne said that it had to be remembered that the patients under discussion were not finished with when they had been delivered. It had been taught that chronic glomerular nephritis followed eclampsia. Professor Browne had never seen it, but would not deny that it might occur. These patients had often not been followed up for long enough. The glomerulus often took one and a half years to heal and albuminuria had been known to take fourteen months to clear up. Such a delayed glomerular healing had been described years before by the Germans. What did occur was chronic vascular hypertension—50% of the patients developed it. There was some reason to believe that the patients were those with a familial hypertensive background.

Professor Browne had studied the matter for years before the war, but it required further work for its proof. Chronic nephritis was seen in only 5% of cases of toxæmia.

PROFESSOR B. T. MAYES (Sydney), in opening the discussion on Professor Browne's paper, asked first of all whether eclampsia was a preventible disease. He said that in Australia during 1946, 49 women had died from eclampsia—17 of the deaths occurred in New South Wales, 14 in Queensland, 8 in Victoria, five in South Australia, four in Western Australia and one in Tasmania. On analysis of the cases it was found that nearly all of them were emergency cases and that it was very difficult to save the patients. Irwine, of Dublin, had said that it was impossible to prevent a patient from developing toxæmia, but that it should be possible to prevent eclampsia in almost every case. This meant that when a patient was under careful pre-natal observation the so-called fulminating cases should not occur. Professor Mayes thought that most practitioners carried out careful pre-natal supervision, but the patient had to play her part and give the doctor a chance to do his work properly. Once a toxæmic patient had a fit, her risk of dying at once rose from a mortality of 2% to one of 20%. A fit increased the patient's risk tenfold. It was not known how many cases of eclampsia occurred in Australia. The disease was a serious condition and Professor Mayes thought that it should be made notifiable. Referring to the subject of œdema, Professor Mayes said that it played a major part in the aggravation of toxæmia. For example, while external œdema over the tibia was obvious, internal œdema also existed, and in certain positions such as the brain, lungs and kidneys, might play a major role. In the brain, cerebral œdema inside an inelastic shell was probably the explanation of headache, perhaps of convulsions, certainly of coma. Acute pulmonary œdema and post-eclamptic pneumonia might be fatal happenings, while œdema inside a tight renal capsule would certainly impair the function of the kidney. Some fine day, no doubt, there would be something equivalent to penicillin as used in puerperal infections—a kind of specific button, which, when pressed, would smite the disease at its source. In the meantime the condition had to be treated symptomatically. The attack on œdema represented the major symptomatic weapon.

In discussing the treatment of œdema, Professor Mayes outlined the normal diet for pregnancy, the diet for mild toxæmia and an œdema diet of milk, eggs and rice. The last mentioned should not be used for more than one week.

Professor Mayes, after describing the intragastric drip method of treatment of severe oliguria with glucose, peanut oil and water, gave details of the history of a patient who had recovered after this form of therapy. He also referred to a patient whose history he had reported in 1943 and who had recovered with nothing more than the intravenous injection of glucose. He asked where lay the truth of the treatment. He admitted that the question was difficult, but said that he felt sure that credit lay on the conservative side.

DR. W. K. MCINTYRE (Launceston, Tasmania) said that his ante-natal treatment was based on the Edinburgh teaching by Ballantyne and Young as laid down by Professor Browne in his book. In the middle thirties Dr. McIntyre had requested the Tasmanian Health Department to make eclampsia a notifiable disease as it would increase interest in ante-natal work. This proposal had been turned down. As a practical point Dr. McIntyre remarked that he took more notice of the diastolic than of the systolic blood pressure—the systolic pressure might be markedly affected in a nervous patient. Atelectasis might be prevented by suction through the vocal cords with a bronchoscope. After Cæsarean section the baby should be placed in a respirator, as by this means the incidence of atelectasis was reduced and many more babies survived. The impression that the incidence of eclampsia was affected by weather had not been borne out statistically.

Reconstruction of Vaginal Atresia.

DR. G. L. STENING (Sydney) read a paper on the reconstruction of vaginal atresia, based on four cases with which he had dealt in the preceding three years. He said that vaginal atresia had been classified under the headings of congenital and acquired types of internal and external atresia, and that he would discuss only congenital internal atresia. Dr. Stening gave a brief account of the embryology of the condition, and said that, although there were divergent views, it was certain from embryological considerations that atresia could be produced by an upset in the mechanism of development. In some cases the congenital abnormality was apparently restricted to imperfect canalization. In others associated congenital lesions might coexist. It was a rule in congenital anomalies to search for others. The patients were usually healthy except for the defect in the vagina, or uterus, or both. Therefore symptoms might arise at the menarche, when menstruation failed to appear. Amenorrhœa might be symptomless or associated with monthly molimina. It might be that no examination was made to detect the abnormality until intercourse was attempted. The diagnosis might not be obvious, and might require examination of the patient under anæsthesia. Dr. Stening mentioned methods of attempting to reconstruct the vagina which had previously been in use; he considered them hazardous and unsatisfactory. He said that, although his series had been small, the results had been satisfactory from the physiological and physical points of view. The operation used was based on the principle of dissecting the vaginal space between the bladder and rectum, and applying a split skin graft on a suitable "Stent" mould. There was little danger provided that care was exercised in the dissection to avoid the bladder or the rectum; if such care was not taken, ultimate sloughing and fistula formation might occur. It would be seen also that the peritoneal cavity could be opened at the summit of the dissection, particularly if the dissection was to proceed posteriorly to the cervix. The use of a syringe to aspirate the hæmatocolpos or mucocolpos at the summit of the dissection gave the clue to further dissection. When that opening was enlarged, the surgeon was able to determine the state of affairs more accurately. Hæmorrhage was not severe if the correct planes were dissected apart. If some bleeding occurred, complete hæmostasis was essential for the success of the

graft. In all the four cases, the following results were achieved: (i) an adequate vagina; (ii) no fibrous bands or cicatrization; (iii) no tendency to contracture of the vagina; (iv) a contented psychological condition, the patient knowing that, although her chances of childbearing might be remote, she was at least restored as a member of society and not inferior to many sterile women.

DR. ROBERT FOWLER (Melbourne) said that he considered that the old methods had been complicated and dangerous, and that the new methods, whilst satisfactory and safe, were simple only in the hands of experts. Often there occurred an emotional predicament, a tragic dilemma, sometimes suicide. That emotional aspect was the basis of all treatment. Dr. Fowler quoted seven cases of vaginal atresia with one fatality. Five of the patients had been treated by the Baldwin technique, one by Schubert technique and the other by pressure. He emphasized the importance of entering the right plane, no matter what the type of treatment.

DR. W. D. CUNNINGHAM (Sydney) reported one case with a satisfactory result; the patient had become pregnant three months after operation.

DR. H. W. HORN (Brisbane) said that he considered that it was easy to get perfect results by the flap method, and he quoted three cases to support his statement.

The Changing Face of Obstetric Infection.

DR. A. M. HILL (Melbourne) read a paper entitled "The Changing Face of Obstetric Infection", based on figures from the Women's Hospital, Melbourne, in the ten-year period from 1940 to 1949. In that period 41,643 women had been confined and 18,285 treated for abortion, diagnosed as "septic" in 5175 instances. Dr. Hill said that the last fifteen years had seen outstanding advances in the prevention and treatment of obstetric infection; that was due chiefly to the introduction and development of modern chemotherapy and antibiotic therapy, but important contributory factors were improved bacterial knowledge and methods of investigation, and a clearer appreciation of the place of maternal resistance in combating infection. In the ten-year period under review, due allowance being made for fluctuations, puerperal morbidity had dropped from 6·7% to 0·8%, and there had been corresponding decreases in the mortality rates from anaerobic streptococcal infections, from group A hæmolytic streptococcal infections, from *Staphylococcus pyogenes* infections and from *Clostridium welchii* infections. Dr. Hill said that if they were employed sufficiently early, in adequate dosage and with correct bacteriological and clinical indications, penicillin and the sulphonamides would control the great majority of obstetric infections now encountered. In at least 90% of cases penicillin was the best agent, sulphonamides being required chiefly for infections due to *Bacterium coli* and to anaerobic Gram-negative bacilli (against which they were not uniformly effective). Dr. Hill described the routine of treatment with penicillin adopted at the Women's Hospital, Melbourne, and said that the dosage rarely exceeded 100,000 units every three hours. Prophylactically penicillin and the sulphonamides were invaluable in obstetrics associated with long-standing rupture of the membranes, in cases of prolonged labour, in the presence of a vaginal discharge, or when surgical measures were contemplated. Therapeutically they should be used in all severe and moderately severe infections, but not generally in mild infections unless there was some complicating factor, such as a surgical wound, extrauterine spread, or the presence of bacteria infectious to others (*Streptococcus hæmolyticus* group A, *Staphylococcus pyogenes*). When penicillin and the sulphonamides were employed together with blood transfusions in the treatment of infection following abortion, they generally made early uterine curettage possible and had greatly reduced morbidity and the period in hospital. Important disadvantages of penicillin were the need for parenteral administration for full efficiency, the development of penicillin-resistant strains, and the production of neutralizing penicillinase by associated bacteria. When those last factors could not be overcome by massive dosage, other agents were required. The newer antibiotics might prove valuable and even life-saving in such circumstances; but their main disadvantages were high cost, short supply, an insufficient knowledge of their antibacterial capabilities, and in certain instances, the development of toxic manifestations and drug resistance. For those reasons their selection should always depend on proved sensitivity of the bacteria concerned. With those indications streptomycin might be employed against sulphonamide-resistant Gram-negative bacilli, aureomycin against penicillin-resistant cocci and bacitracin in severe or resistant infections of mixed bacterial type. Dr. Hill, in conclusion, said that it appeared that immediate improvement in the outlook of obstetric infections would depend less on increased efficiency in modern methods than on the development of more effective antibacterial compounds.

PROFESSOR B. T. MAYES (Sydney) said that twenty years previously he had heard a prominent surgeon in London say: "What they do in Edinburgh today in surgery, we do in London tomorrow." When the subject was puerperal infection, Professor Mayes himself would say: "What they do in Melbourne today, we do in Sydney tomorrow." If he was asked why, he would give the answer in three words: "Hill and Butler." For the reasons which Dr. Hill had advanced, the face of puerperal infection had changed in two practical ways: (i) cure of an infection was surer and quicker; (ii) the problem of isolating a patient had been considerably eased. At the King George V Hospital for Mothers and Babies they no longer segregated the pyrexial patients as a class, but discriminated between pyrexias due to the hæmolytic streptococcus G or A and *Staphylococcus pyogenes* on the one hand and the remaining bacteria on the other. Professor Mayes said that only the previous week he had attended a meeting at the Department of Public Health of New South Wales, at which were drafted suggested alterations to the act which controlled the activity of obstetricians and obstetric nurses in cases of puerperal infection. The suggestions were based on the work of Hill and Butler. Professor Mayes went on to say that Dr. Hill in his paper had shown that in Melbourne there was a preponderance of anaerobic streptococci over other organisms in puerperal infection, and had said that that picture could be taken as reasonably representative of Australia. Professor Mayes wondered if it could. Two points had to be borne in mind. The first concerned the diagnosis of puerperal infection—whether it was made by the clinician or by the bacteriologist. Professor Mayes suggested that the diagnosis should be made as the result of a consultation between clinician and bacteriologist, not merely on the clinician's quick scanning of a few words on the pathologist's report. The second point concerned the methods of culture, which depended on the preference of individual bacteriologists, and the site from which the culture material was taken. At least it could be said that to assess with accuracy the relative frequency of occurrence of various organisms ætiologically related to pyrexia, it would be necessary to take a swabbing from some point in the genital tract higher than the vagina, if the cultivation of contaminants was to be avoided. Professor Mayes also referred to the dosage of penicillin used, and to the question whether the finger or the curette should be employed. He briefly quoted a case of rupture of the uterus, in which the patient, pregnant for the fourth time, had had to travel 100 miles in an ambulance after having been six hours in labour, the membrances having ruptured before labour commenced. She underwent hysterectomy, her temperature remained normal, and she had a calm convalescence. Professor Mayes drew attention to the contrast between that case and what had occurred in the old days, with the use of rubber tubes. As the Frenchman said: "*Nous avons changé tout cela.*" They should remember that prevention was the thing, and that 100 years earlier Semmelweiss had also changed the face of puerperal infection, without a bacteriologist (the word "bacteria" had not been coined) and without penicillin. He had reduced the deaths from infection in his wards in Vienna from 114 to 12 per 1000

by insisting that his students wash their hands and clean their finger-nails before attending a confinement. It was salutary to recall that, lest the complacency born of a penicillin screen allow some of the earlier furrows to return to the brow of the puerperal face.

DR. J. N. CHESTERMAN (Sydney) emphasized the value of the antibiotics and showed charts of the causal organisms found at the Women's Hospital, Crown Street, Sydney. He reported that in coliform bacillus infections streptomycin had resulted in dramatic recoveries, and asked Dr. Hill how anuria was treated in Melbourne. Dr. Chesterman finally said that in the control of infection it was important to prevent tissue damage and blood loss, and to treat the initial infection by the "wonder drugs".

Dr. Hill, in reply to Professor Mayes, said that diagnosis was made by team work between the clinician and the bacteriologist. He agreed with Dr. Chesterman on the use of blood transfusions. He said that as a result of twelve months' investigation he still chose the three-hourly method of penicillin dosage in preference to larger dosage at longer intervals. He felt that the *Bacterium coli* had a nuisance value, but the majority of infections responded to sulphonamide drugs. The important thing in treatment was to knock the organism quickly and then to stop treatment. In reply to Dr. Chesterman, who had asked about anuria, Dr. Hill said that as no case of renal failure had occurred since 1947, he had had no experience with the latest methods of treatment such as the intragastric drip method.

The Changing Place of Cæsarean Section.

PROFESSOR J. W. JOHNSTONE (Melbourne) read a paper entitled "The Changing Place of Cæsarean Section". He began by giving a short summary of the history of the operation, with an appraisal of the position of Cæsarean section twenty years previously. He said that at the present time, statistics were at hand which showed that the mortality rate in cases of premeditated Cæsarean section was down to that of the general elective operations in surgery; in the absence of infection it was less than 1%. When the rate was higher, the fact might be due to the inclusion of emergency operations and of complicated cases from other hospitals. Moreover, the mortality rate was often that of the complicating abnormality. The outstanding feature in the changing position of Cæsarean section was the pronounced reduction in the mortality rate of sections undertaken after the membranes had ruptured. That had widened the field of usefulness of the operation, and made possible the extended use of trial of labour. It had also diverted attention from the cold mechanical factors in assessing the outcome of labour to observation of the summated physiological factors as labour progressed. It had made pubiotomy a nonentity in the statistics of the Women's Hospital, Melbourne, and internal version, craniotomy and high forceps delivery less frequent necessities; but it had to be remembered that the factors which had made abdominal delivery safer had likewise made vaginal operative delivery safer. The best teaching hospitals in Great Britain and American hospitals had been encouraged to employ Cæsarean section in 6·2% of their cases. Professor Johnstone then dissected the figures for Cæsarean section over the last thirty years at the Women's Hospital, Melbourne, and quoted three illustrative cases. In the last statistical year (June, 1948, to June, 1949) none of the 157 patients had died. The main facts emerging from the figures were: (i) The overall mortality rate of the operation as performed in all cases had progressively declined during the last twenty years, and particularly during the last five years. (ii) The scope of the operation, as reflected in its incidence compared with the total number of deliveries, was being extended—in the last five-year period the operation had been used nearly twice as frequently as before; the increased incidence had begun during the last three years. However, by comparison with standards in other countries the incidence was still low (about one in 38 cases). Some variation in statistical methods might have some bearing on that observation. In the hospital series a number of the deaths were due to illness unrelated to the operation; one-third of the deaths were due to infection, though no such deaths had occurred during the last five years; one-quarter were due to albuminuric toxæmia and eclampsia, one-eighth to hæmorrhage and one-eighth to embolism. Embolism had not caused a death since anticoagulants had been used as a routine measure. Fœtal wastage had fallen from 26·2% in 1919-1924 to 12·4% in 1945-1949, with one or two slight rises in the intervening period. Professor Johnstone considered that, apart from obstetric skill and judgement, the factors producing the fall had been resuscitation measures, bacteriological methods, chemotherapeutic control, improved anæsthesia, the use of anticoagulants, gastric aspiration and operative technique. With regard to the type of operation, the use of the classical procedure had declined and that of the lower segment operation had greatly increased. Professor Johnstone concluded his paper by discussing the indications for Cæsarean section and giving a strong warning, with an illustrative case, against its over-enthusiastic use.

PROFESSOR G. SHEDDEN ADAM (Brisbane) discussed the indications for Cæsarean section, and referred to Cæsarean sections performed at the Brisbane Women's Hospital during the previous few years. He pointed out that disproportion and mechanical dystocia were an indication almost twice as often in Melbourne as it was in Brisbane. In regard to mechanical dystocia, the clue to the difference might lie in the fact that increasing attention was being paid in Brisbane to variations in pelvic shape apart from contractions at the brim. He did not agree with the oft-quoted statement that any fœtal head which would pass through the brim would also pass, or could be delivered without difficulty, through the pelvic cavity or outlet. In that matter radiological examination was of assistance. Elective Cæsarean section as distinct from a modified trial of labour for mid-pelvic contraction should probably be limited to the type of patient who had conceived only after many years of marriage and who appeared to have an infant of more than average size. Failure of uterine action appeared to constitute a more frequent indication in Brisbane than in Melbourne, but this was probably more apparent than real. Cæsarean section did not solve the problem of primary uterine inertia and it was doubtful whether any increase under that heading was justifiable. In regard to 38 "repeat operations" in the Brisbane series, in 37 cases the original operation had been performed because of disproportion. It was their practice to assume that patients who required Cæsarean section for a condition such as *placenta prævia* or severe preeclampsia could have subsequent normal deliveries unless there was good reason to think otherwise. The place of Cæsarean section in the treatment of *placenta prævia* was becoming more clearly defined and an increase of Cæsarean sections on account of that condition was to be expected. The vogue for treatment of accidental hæmorrhage by Cæsarean section was on the wane. In the early part of the century toxæmia had been overdone as an indication for the operation, and it had been stated in consequence not to be an indication. In the last decade, however, saner views had prevailed and the place of Cæsarean section in severe toxæmia was fairly well established. Professor Adam gave his views of justification for the operation in both preeclampsia and established eclampsia. He also referred to the incidence of Cæsarean section for intercurrent maternal disease, and mentioned diabetes and heart disease. After pointing out that the incidence of the operation in the series reported by him was almost identical with that reported by Professor Johnstone, he said that its proper use called for a sane and properly tempered obstetric judgement.

PROFESSOR F. J. BROWNE (London) said that Professor Johnstone was right in his view that there was a higher incidence of Cæsarean section in British hospitals, 6·2% as compared with 2·6% in Melbourne. This was due to a larger number of domiciliary deliveries in Britain, where in only the worst cases were patients admitted to hospital. The use of "sulpha" drugs and penicillin had extended the use of Cæsarean section in trial labour. An important incident in trial labour was rupture of the membranes

because of the danger of amniotic sepsis, which was in proportion to the length of time after which membranes ruptured. Another danger, however, was fœtal death *in utero*, which might occur owing to the inhalation of infected *liquor amnii*. The infant might either be stillborn or die within forty-eight hours, the main reason being that the liquor trickled away and the uterus was allowed to retract on the placental side and to cut off the fœtal circulation; in that way fœtal asphyxia occurred. That was the reason why chemotherapy had not reduced fœtal mortality in trial labour.

Professor Browne considered that there were only two methods of treatment in *placenta prævia*, artificial rupture of the membrane and Cæsarean section. Macafee had produced by Cæsarean section the lowest figures so far reached. Professor Browne had used anticoagulants for some time as a routine procedure combined with early exercise and ambulation, and since doing so had had no case of embolus. He still thought that there were some disadvantages in Cæsarean section, for he felt that a patient was never quite the same afterwards, her obstetric future was prejudiced and there was always a danger of death from embolism and paralytic ileus, with remote danger of rupture of scar and adhesions leading to obstruction. Cæsarean section should still be looked upon as a serious procedure to be undertaken only when there was no other alternative. The obstetrician's attitude to trial labour could well be revised. Since 1929 trial labour from disproportion had shown a fœtal mortality of 15·7%. This could not be lowered without Cæsarean section.

A film was shown, dealing with Cæsarean section, which had been prepared eighteen months previously by Faulkiner in Ireland at the Rotunda Hospital.

DR. W. E. HASKER (Rockhampton, Queensland) asked Professor Johnstone what place sterilization had in these cases.

DR. R. B. SALTER (Brisbane) stated that among 123 cases of Cæsarean section at the Brisbane Women's Hospital there had been eight fœtal stillbirths and neonatal deaths. In two the cause was previability and in six prematurity and varying degrees of anoxia. All these had occurred in cases of *placenta prævia* and the findings in all babies at post-mortem examination had been atelectasis.

PROFESSOR B. T. MAYES (Sydney) discussed the question of repeated Cæsarean sections. He said that unless one was very confident of the case, a repeated Cæsarean section should be done. New York figures showed that a classical scar ruptured in 4% of cases and a lower segment scar in 2%.

Professor Johnstone, in reply to Dr. Hasker, said that he could not lay down any fixed rules, but probably sterilization was reasonable at the third Cæsarean section.

Section of Anæsthesia.[1]

President: A. D. Morgan, M.B., Ch.M., D.A., F.I.C.A., New South Wales.
Vice-Presidents: S. R. Hecker, M.B., B.S., South Australia; R. A. Lewis, M.B., B.S., Tasmania; D. G. Renton, M.B., B.S., D.A., Victoria; J. H. Wilson, M.B., B.S., Queensland.
Honorary Secretary: Isabel McLelland, M.B., Ch.M., Queensland.

President's Address.

DR. A. D. MORGAN (Sydney) delivered his president's address at a combined meeting with the Section of Pædiatrics and the Section of Surgery. It dealt with anæsthesia in thoracic surgery in childhood and has already been recorded.

Trilene.

DR. MARIE HILL (Sydney) read a paper on trilene, an abbreviation of trichlorethylene; she said that it had been first discovered in 1864 as a grease solvent, and was still widely used in industry for that purpose, and that it was now one of the recognized inhalational anæsthetic agents. Dr. Hill shortly traced the history of trilene as an anæsthetic agent, and said that it was a heavy, colourless liquid of low volatility. It was a halogen compound and bore a resemblance to chloroform. The smell was sweetish and not irritating. It was highly soluble in lipoids, but only sparingly so in water. It was not inflammable in air or in oxygen at the concentrations used in anæsthesia and analgesia. It had a tendency to decompose in sunlight, and in heat in the presence of an alkali, with the production of dichloracetylene and subsequently phosgene. Trilene was coloured with waxoline blue to distinguish it from chloroform, and was put up in deep amber glass bottles or in solid metal containers, with the addition of 0·01% thymol; both those expedients were adopted to retard decomposition. Trilene might be considered a safe anæsthetic agent when given with adequate oxygen, and in the prescribed concentrations of 0·35% to 1·5%, and if the closed circuit was prohibited. It was mainly eliminated by the lungs, and owing to its low volatility its rate of evaporation from the lung was slow. The blood chemistry was very little altered by it. Acetonuria occurred to the same extent as with other local or general anæsthetic agents, salivation was not a feature, and nausea and vomiting were rare. It quickly produced tachypnœa as it passed out of the analgesic into the anæsthetic range; that could be avoided by administration at the rate of only one drachm per hour, with nitrous oxide and oxygen (20%). Sudden apnœa was another sign of overdosage, and a third type of respiratory complication was a series of irregular short breaths. The only essential treatment of such conditions was withdrawal of trilene. Dr. Hill went on to say that trilene had no particular effects on the blood pressure. The occurrence of transient cardiac arrhythmias was common, and care was necessary to prevent such a condition as ventricular fibrillation from developing owing to overdosage. Some authorities held that adrenaline should not be given with trilene. Toxic effects of trilene on the central nervous system were manifested by palsies of the cranial nerves of varying duration, convulsions and death. The chief advantages of trilene were the smoothness of induction, the excellent analgesia with retention of consciousness in suitable concentrations, and the absence of post-anæsthetic vomiting. It was portable, non-inflammable and inexpensive. The chief disadvantages were the slowness of induction, the poor muscular relaxation even with high concentrations, and minor post-anæsthetic discomforts such as headache and heaviness. The two last-mentioned were usual only after prolonged administrations. Trilene was contra-indicated in operations requiring muscular relaxation, and when it was desired to employ the closed circuit. The clinical purposes for which trilene was most used were the relief of pain in labour, the production of analgesia in general and pædiatric practice, the provision of a light "sleep" during procedures in which muscular relaxation was achieved by other means, such as spinal block or the use of the modern relaxants, and finally as an adjuvant to other forms of anæsthesia. Dr. Hill then discussed in detail the uses of trilene which she had mentioned.

[1] The meetings held by the Section of Anæsthesia with the Section of Pædiatrics and the Section of Surgery and with the Section of Obstetrics and Gynæcology have been recorded.

DR. D. MACKELLAR (Mooroopna, Victoria) asked if any work had been done with the combination of trilene and ether for purposes of induction of anæsthesia.

Dr. Hill replied that she had had no experience of using trilene in that way, but there was no reason why it should not be so used.

DR. R. J. JACKSON (Armidale, New South Wales) said that he had been told that ambulance officers were allowed to use trilene, and asked what was the reaction of the doctors present. He also asked what was the possibility of death of the patient when trilene was used by ambulance officers.

Dr. Hill, in reply, said that she had not seen the type of apparatus which ambulance officers used, but in any case it was difficult to assess the amount of vapour coming from any machine, particularly in a hot ambulance. She doubted whether anæsthesia could be obtained in the average case. Certainly in England trilene could not be used by midwives. Incidentally, she knew of a patient who had committed suicide with trilene.

DR. A. D. MORGAN (Sydney) said that the New South Wales Branch of the British Medical Association had approached the Australian Society of Anæsthetists, which had reported unfavourably on the use of trilene by ambulance officers.

DR. D. G. RENTON (Melbourne) said that he agreed that ambulance officers should not use trilene, although nurses were being given instruction in the production of analgesia with trilene; in his opinion it should be given only under strict supervision.

DR. R. A. LEWIS (Hobart) said that he thought that trilene, which caused cardiac irregularities, should not be used by ambulance people because of the risk of sudden death.

Dr. D. G. Renton moved a motion that members of the Section of Anæsthesia viewed with alarm the use of dangerous drugs such as trilene by untrained personnel. Dr. R. A. Lewis seconded the motion.

DR. A. T. PITT (Brisbane) asked whether trilene would help in performing antral lavage on children. He also said that in the country ambulances had to take patients hundreds of miles. He wondered whether it was not possible that some anæsthetics should be given to relieve pain when the patients were travelling over long distances, as often occurred in the backblocks of Queensland.

Dr. Morgan said that one could not depend on the inhalation of trilene for a journey of hundreds of miles. There were other analgesics which could be taken by mouth. He could not help it if ambulance authorities cared to take risks against the advice of people who knew something about anæsthesia.

DR. R. B. SPEIRS (Sydney) said that he had found an absence of nausea and vomiting when trilene was combined with even large amounts of ether. He also mentioned that it was easy to perform a "blind" intubation with the patient under trilene, particularly in dental anæsthesia. Analgesia was produced early in the inhalation of trilene, particularly, around the naso-pharynx. He also suggested that it was a good idea to spray the naso-pharynx with "Neo-Synephrine". That procedure took only five minutes, and then the pharynx could be packed off.

Dr. Hill, in reply, said that she thought that the absence of vomiting was due to the smooth induction with trilene; there was no swallowing of saliva and less intake of irritating substances.

DR. J. WOODLEY (Melbourne) said that he had used an old Junker's bottle for the administration of trilene. His method was to induce anæsthesia in the usual way and then to change to the Junker's inhaler. The bulb was squeezed each time the patient took an inhalation.

Dr. Renton said that trilene was an analgesic and in anæsthesia it must not be relied on alone. The tendency was to blame ether at the present time. Anæsthetists should examine themselves and see whether the anæsthetist was not at fault.

DR. A. J. BRYDON (Urunga, New South Wales) said that he would like to know something of a drug which did not need a complicated apparatus as trilene appeared to do. He asked what were the advantages of trilene over ethyl chloride, ether and chloroform.

Dr. Hill, in reply, said that trilene did not take the place of ether, chloroform or ethyl chloride. It should be used as an analgesic, typically for casualty practice, in which the anæsthetist must warn the patient that he might feel some pain.

DR. J. F. DUNKLEY (Brisbane) wished to know something about trilene in obstetrics. He had found it useless. He said that women did not want to help themselves when having babies. If trained anæsthetists were available, trilene would be satisfactory. In fact, he submitted that trilene was not so effective as morphine followed by "Sodium Amytal".

Dr. Hill, in reply, said that trilene had little effect on the child. It was not expected to render the mother unconscious, but merely to take the edge off her pain. Patients who had had both nitrous oxide and trilene for different deliveries stated that they obtained more relief from trilene. As a contrast to English women, Australian women did not expect analgesia but anæsthesia. The trouble was that the working of an inhaler must be explained carefully to the obstetric patient, and usually she found it difficult to assimilate the information.

Dr. Jackson said that in his experience in obstetrics, trilene had a place. Chloroform could be given most effectively in the last stages of delivery.

Stellate Ganglion Block.

DR. I. SCHALIT (Newcastle) read a paper on stellate ganglion block, chiefly in relation to post-traumatic conditions of the upper extremity and the occasional pain which resulted. He also mentioned other areas whose sympathetic supply was controlled by the stellate ganglion. Dr. Schalit described a different approach to the ganglion. He said that a line was taken from the hyoid bone to the spinous process of the seventh cervical vertebra, and where it crossed the posterior border of the sterno-mastoid was the site for injection. The needle was directed in a backwards, inwards and downwards direction with a slight emphasis on the downward angulation. The needle struck the junction of the bodies of the seventh cervical and first thoracic vertebræ. The solution used was 15 millilitres of a 1% procaine solution. For permanent blocking of the ganglion, 6% carbolic solution as recommended by Haxton was suggested as being better than alcohol. Complications other than minor psychological upsets were almost non-existent. Care had to be taken that an intrathecal injection was not given. A definite sign of a successful injection was the appearance of Horner's sign.

Dr. Schalit mentioned several theories of the causation of unexplained chronic pain which was relieved by sympathetic interruption. The relief of pain experienced varied in duration from a couple of hours to permanency. If its duration was in the region of forty-eight hours and it was followed by recurrence, then a further block was performed. Horner's syndrome was present in nearly all cases. Its absence did not mean that the block was a failure, for there was relief in the area of the lesion. Thus it could be said that in those cases the sympathetic pathway to the affected area had been interrupted.

Dr. Schalit then mentioned three drugs which had a similar action to stellate ganglion block—"Priscol" given intravenously, ether given intravenousuly, and amyl nitrite. Emotional changes were experienced occasionally by the patients, the higher proportion occurring amongst women. The duration of the changes was short. Physiotherapy was employed in all cases in which pain had previously limited the range of movements, in which muscular weakness had been present, or in which both these factors had been present. The commonest indication for the block was post-traumatic pain typically following a Colles's fracture. In cases of causalgia and amputation stump neuralgia, generally little relief was afforded.

Dr. Schalit suggested that there were certain types of cases in which after operation a stellate ganglion block would be indicated; he instanced a case in which a pedicle graft was taken from the abdomen or thigh to the forearm, or amputation of a lower extremity for organic arterial occlusion, the object being to increase the blood supply to the area for the benefit of grafts. It was also suggested that prior to permanent destruction or removal of the ganglion a procaine block should be performed as a test. Patients with cerebral thrombo-embolic catastrophes, if examined within twenty-four hours, should be treated by a stellate ganglion block. Dr. Schalit mentioned the improvement that occurred in one case of severe *angina pectoris* after permanent destruction of the first, second, third and fourth thoracic segments on the left side.

DR. M. HILL (Sydney) asked what was Dr. Schalit's opinion about the use of a 1% solution of procaine given intravenously in obstetrical cases.

Dr. Schalit, in reply, said that he had had very little experience with procaine in obstetrical cases; but in the few cases in which he had used the method, he had used a 0·5% solution. He quoted two cases in which the relief was complete over the period of three hours in one case and two hours in the other.

Dr. Hill then asked whether convulsions had ever been observed in Dr. Schalit's experience in obstetrical cases.

Dr. Schalit said that when procaine was used in conjunction with general anæsthesia, he had observed convulsions seven or eight times during a very large series of cases. The only measure taken on their appearance was the immediate stopping of the procaine infusion. If the convulsions did not disappear within a very short space of time, one or two millilitres of thiopentone were injected. He had never observed convulsions in obstetrical cases.

DR. W. PRYOR (Ballarat, Victoria) said that he had been using procaine intravenously in obstetrical cases for a number of months. He considered that it was most successful, and he quoted one patient who had come back and asked for the same anæsthetic a second time.

DR. A. D. MORGAN (Sydney) said that Dr. Schalit was most fortunate in having a full-time anæsthetic position; he had the opportunity of doing the type of work that all anæsthetists wanted to do but were unable to. Dr. Morgan thought that Dr. Schalit's enthusiasm for stellate ganglion block was too great. For shoulder pain, he suggested that injection of the suprascapular nerve with "Proctocaine" would restore the function of the shoulder in a great number of cases. The causalgias and sideroses could be treated by diversion of the sympathetic trunk below the stellate ganglion; the results were brilliant and permanent.

Dr. Schalit, in reply, said that he had not the great enthusiasm for stellate ganglion block that Dr. Morgan suggested, but he was often put in the position of having a large number of patients sent to him for the injection. The psychological element was pronounced in those cases, especially so in women, and a large number of patients were rejected as unsuitable for the block. He had had no experience with injections of the suprascapular nerve, and thought that injection of the stellate ganglion would be preferable in the first instance to the operation suggested by Dr. Morgan. Dr. Schalit thought that the treatment of chronic pain could come under the department of anæsthesia.

DR. J. MCCULLOCH (Sydney) said that a pain relief clinic was being started at the Royal North Shore Hospital of Sydney; it was an idea of Dr. C. N. Paton. For such a department the technical difficulties were great. Dr. McCulloch asked whether the approach to the stellate ganglion was as simple as had been described.

Dr. Schalit replied that the approach was simple in the method described, and in spite of the structures in the region there was no indication that any structure had been in any way damaged in what was a comparatively large number of cases. If the directions were followed, one must hit the body of the vertebra in contrast to the posterior approach. The injection was simple enough to be done by second-year resident medical officers under instruction.

Anæsthesia Abroad.

A paper by DR. H. J. DALY (Sydney) on some impressions of anæsthesia abroad gained in a recent journey to Canada, the United States of America and England was read in his absence by Dr. J. McCulloch. He described the type of work that he had observed at each centre and also referred to the hospital equipment and apparatus which had impressed him in each instance. He also laid stress on the value of personal contact and discussion with leaders of thought in other centres.

DR. D. G. RENTON (Melbourne) referred to expendable material. He said that it could not be obtained in Melbourne mainly because of its expense. In his opinion that expense should not be very great, because the price of rubber in use in Victoria was very little less than that of the American product.

DR. D. MACKELLAR (Mooroopna, Victoria) said that no mention of "Neo-Synephrine" had been made in the paper.

DR. A. D. MORGAN (Sydney), in reply, said that in Learmonth's technique "Neo-Synephrine" was not used, but reliance was placed on a low head position and a high oxygen concentration. That appeared to have considerable value, because as a contrast to general anæsthesia there was not the possibility that some patients might suffer damage to cerebral tissues, which was indicated in the post-operative period by such conditions as personality changes and deafness. Dr. Morgan also said that the hospital at Hertford (United States of America) where Ralph Tovell was in charge had its own oxygen generating plant; but for Australia the expense of making such a plant was probably prohibitive.

Section of Ophthalmology.[1]

President: N. M. Gregg, M.C., M.B., Ch.M., F.R.A.C.S., D.O.M.S., New South Wales.

Vice-Presidents: J. L. R. Carter, M.B., B.S., Tasmania; W. Lockhart Gibson, M.B., Ch.M., F.R.A.C.S., Queensland; T. L. McLarty, M.D., B.S., D.O.M.S., South Australia; L. Mitchell, M.D., B.S., F.R.A.C.S., Victoria.

Honorary Secretary: J. Hart, M.B., B.S., D.O.M.S., Queensland.

President's Address.

DR. N. M. GREGG (Sydney) in his president's address described some impressions he had gained from his visit to overseas clinics and put forward some ideas in regard to the conduct of clinics here which he had formulated as a result of that visit. He paid a tribute to the warmth of the welcome and to the hospitality he had received as an ophthalmological colleague from overseas. He then summarized his impressions of the surgery of cataract, glaucoma, retinal detachment, and corneal transplantation. He described the favourable impression he had gained from the general excellence of the equipment of the clinics visited. Amongst other features noted were the importance placed on pathology, the excellence of the

[1] The meetings held by the Section of Ophthalmology were held in conjunction with the tenth annual meeting of the Ophthalmological Society of Australia (British Medical Association). The meeting of the Section of Ophthalmology held with the Section of Neurology and Psychiatry and the Section of Oto-Rhino-Laryngology has been recorded.

library facilities, the departments of photography and medical artistry, and the wide range and variety of useful research which was being carried out. In regard to clinics in Australia Dr. Gregg considered that a large-scale reorganization of the general set-up was required. This would have to be a long-term policy, but in the meantime there were many improvements which could be carried out in the immediate future. In this respect he suggested improved facilities by: (*a*) the modernizing of equipment; (*b*) the provision of better and more accessible libraries; (*c*) the establishment of specialized pathological departments administered by an ophthalmologist with special training in pathology; (*d*) the development of the departments of photography and medical artistry; (*e*) the better coordination of the working of the larger clinics by the appointment of one member of the staff to be responsible for its control and direction; (*f*) the institution of regular meetings of the entire staff of each clinic. Dr. Gregg dealt shortly with the need for improvement in the training of the younger post-graduate students, and finally he suggested that efforts should be made to obtain for young ophthalmologists a larger share in whatever travelling scholarships were available.

Tasmanian Blindness: 1948.

DR. J. BRUCE HAMILTON (Hobart) presented the results of a fresh survey of blindness in Tasmania, to the end of 1948. He said that the figures had been derived from an examination of 14,560 private patients and 50 persons certified for pensions on account of blindness. These 14,610 examinations were compared with 6770 examinations made in Tasmania in 1938. It was seen that the rate of binocular blindness had dropped from 1·8% to 0·71% in ten years, and the rate of monocular blindness had fallen from 7·5% to 2·9% in the same period. On the other hand, the number of blind civilian pensioners in Tasmania had increased from 179 to 181. Blind war pensioners had increased in number from six to thirteen. Dr. Hamilton presented 25 tables in which his results were analysed and compared. It was found that the leading diseases as causes of blindness in Tasmania were still cataract and glaucoma, and sometimes a combination of both. In the juvenile population congenital cataract seemed to be the only serious disease remaining to be contended with, and this, coupled with senile cataract, accounted for almost 26% of the blindness in Tasmania. Glaucoma was responsible for 14·4% of the total amount of binocular blindness. The figures for *retinitis pigmentosa* had been halved in the last ten years, whilst the proportion of binocular blindness from industrial trauma had dropped from 10·6% to 3·84%. Dr. Hamilton, in conclusion, said that it had to be remembered that during the period from 1938 to 1948 there had been an increase in Tasmania's population of barely 10%, so that population changes could have had little to do with variations in the rates of blindness.

DR. E. O. MARKS (Brisbane), in opening the discussion, said the interest in Dr. Hamilton's figures would increase as time went on and comparisons could be made with the years to come. They all hoped that his survey would be reviewed by him in ten years' time. Plainly there should be no finality in such matters. It was a pity that such figures were not on record since white settlement began, in all the States. There should be records not only of blindness, but of the incidence of eye diseases and injuries. It would seem incredible, were it not true, that at the supposed up-to-date Brisbane Hospital no such record was kept and that even the patients' history cards were destroyed after a short time.

In consideration of Dr. Hamilton's figures, which he had so laboriously collected and so meticulously classified, and which appeared so impressive in tabular form, it was necessary to keep the mind clear as to what they really represented. They did not represent at all the causal incidence of blindness in Tasmania, but only amongst those persons covered by the private practices of the Hobart ophthalmologists. Dr. Hamilton's paper did not make it clear whether the same patient, sighted or blind, could be included in the practices of more than one doctor. Those present all knew that patients flitted from one doctor to another, especially those for whom nothing could be done and in whom hope was not extinct, and those refractory people who could not or would not be happy with or without glasses. Unless repetitions of this nature had been excluded, and it would be difficult to exclude them, the figures would to some extent be vitiated. It would have been interesting to know how the figures varied in the practices of each of the four doctors concerned. Dr. Hamilton's records did give a valuable and reliable, if not wholly accurate, idea of the relative importance of the causes of blindness in Hobart. The only way to obtain accuracy would be by an ophthalmological examination of all blind persons, and even then the uncertain histories and the conjunction of some diseases would confuse some of the tabulation. In the absence of such a record of all blind persons a record of all invalid blind pensioners would be nearly as good, for only a few blind people would not be "on the pension".

About the end of 1936 Dr. Marks had gone through all the blind-pension papers for Queensland, 276 of them, and had tabulated the causes so far as was possible from the imperfect certification. This was published in THE MEDICAL JOURNAL OF AUSTRALIA for May 22, 1937. Of the 276 papers, 84 had no recorded diagnosis, and Dr. Marks had pointed out that this, coupled with the fact that external diseases were much more likely to be diagnosed than intraocular conditions, meant that the figures based on the remaining 192 cases in which a diagnosis was made would not truly represent the causal incidence. The Director of Social Services had informed Dr. Marks that in 1947 there were in Queensland 380 blind pensioners, and since then 36 had been added, while an unknown number had gone off the list. It was very remarkable that with a population of 1,127,000, roughly four times that of Tasmania's 268,000, Queensland had little more than double the number of blind pensioners. Dr. Marks asked why the difference in incidence existed. Dr. Marks suggested that the Department of Social Services should institute an investigation into the numbers and causes of pension blindness in each State. When one considered the cost of each blind pensioner to the taxpayers it would be sound economy as well as humanitarianism and true social service to ascertain how best blindness could be minimized, and accurate figures for the whole Commonwealth were the first requirement to this end.

While Dr. Marks congratulated Dr. Hamilton on the value and excellence of his contributions to blind statistics, there were one or two minor points of criticism which he could not refrain from making. With a total of only 104 blind people, this number was insufficient to justify the working out of percentages, let alone to calculate the percentage to the second place of decimals. To do this suggested faith in an accuracy which did not exist, for the chance variation of one patient would make a difference of 1%, or perhaps as in the tables, 0·96%. Dr. Marks thought that it would have been better just to state the numbers of cases without the reduction to percentages. Another much less important item was an old bone of contention between Dr. Marks and Dr. Hamilton, namely, the suggestion that the so-called sight-saving classes could be expected to save any sight or to influence the progress of myopia and so reduce the incidence of retinal detachments. While such classes were of very great value in the education of the partially sighted, surely it was only wishful thinking, devoid of evidence, to suggest that they saved sight.

DR. RONALD LOWE (Melbourne) expressed surprise that Dr. Hamilton had expected to find a reduction in blindness from myopia as a result of the sight-saving schools. A series of mongoloids had been investigated and the results of the investigation had been reported in *The British Journal of Ophthalmology* of March, 1949. One-third of them had been found to suffer from myopia similar to that found in the general population. These patients never read or performed fine work. Dr. Lowe thought that behaviour in the degenerative type of myopia was determined early in fœtal life and so far there seemed to be no means by which it could be controlled. In regard to

ocular degeneration in diabetics, Dr. Lowe said that he thought overseas investigators had shown that insulin control did not minimize the hæmorrhages and exudates, but that the duration of the diabetic state was important. Dr. Lowe had recently seen three patients suffering from tobacco amblyopia and in every instance the condition had been associated with a heavy consumption of alcohol. The cases had been unlike those reported by Traquair, but similar to those described by American observers, and thus it had been possible to treat the patients satisfactorily as though they were suffering from vitamin deficiency disease. Specific therapy of such a kind was a possible reason for the absence of similar cases from the present table.

DR. ADELAIDE GAULT (Melbourne) said that she had questioned a large group of patients suffering from diabetic retinitis at the Alfred Hospital diabetic clinic. Practically every one of them had confessed to fairly lengthy periods of time in which they had neglected their diabetes. On the other hand, a doctor had had the first of a series of disastrous vitreous hæmorrhages after the institution of insulin therapy.

DR. K. B. REDMOND (Orange, New South Wales) said that there had been a colossal amount of work not only in the presentation of Dr. Hamilton's paper, but in the background the cross-indexing of case reports week by week over a period of years. A guide for the standardization of such classifications would be useful, for in every survey of blindness some differences in nomenclature and categorization were found. It was to be hoped that the schedule of the causes of blindness recently submitted by the American Prevention of Blindness Society to the international meeting in London would be universally adopted. It was formidably comprehensive, but in order to be worth while it had to be. Dr. Redmond went on to say that it was necessary to be careful what conclusions were drawn from statistics, for example, in the making of an occupation list in non-industrial injuries, shooting accidents and so on. The number of cases recorded might not be due to the occupation. At the present time in western New South Wales there were being seen a considerable number of gun accidents due to an inferior brand of bullet which burst back through the case. This bullet was of foreign manufacture. In regard to the improvement of vision in diabetic retinopathy with the administration of "Permidin", Dr. Clifford Colvin and Dr. Redmond had used the preparation extensively and had noted improvement in a large percentage of cases. It was essential at the same time that the sugar metabolism should be controlled by insulin.

DR. DARCY WILLIAMS (Sydney) supported Dr. Marks's remarks about the value of examination of the records of pensioners who received their pensions on account of blindness. He pointed out, however, that anyone wishing to examine such records in New South Wales would find that there were no blind pensioners as such. The papers of persons receiving pensions on account of blindness were incorporated in the records of invalid pensioners and a perusal of those records would show that many of them were unsatisfactory. A rough estimate, made a few years previously, was that among a total of about 14,000 invalid pensioners in New South Wales there were about 2000 who were receiving their pensions on account of blindness.

DR. W. LOCKHART GIBSON (Brisbane) said that there was a comparatively small amount of myopia in Queensland. He showed a table in which were compared the findings of N. B. Harman in England in 30,000 unselected cases and those of J. B. G. Gibson in North Queensland in 22,000 unselected cases. In Harman's series total hypermetropia was found in 56% of cases, total myopia in 27% and myopia of over five dioptres in 3%. In Gibson's series the figures had been respectively 84%, 9% and less than 1%. He went on to say that progressive myopia was very uncommon. About twenty years previously Dr. Gibson had given considerable thought to the reason for the striking variation in myopia in different countries, and to the reason why the increase should be most marked during the rapidly growing stage and cease when growth became less. The complete absence of rickets in Queensland was attributed to the quality of food eaten and to the sunny climate. Sunshine was an important factor in calcium metabolism. Dr. Gibson had started by giving calcium to all subjects of progressive myopia. After a few years of this he had noted that the short, thick-set child did not benefit; however, the calcium seemed to have a very beneficial effect on the tall, bony type of child and he still gave calcium to the latter type.

Dr. Hamilton, in reply, thanked Dr. Marks for his kindly criticism. He agreed that the majority of public hospital records in Australia were quite worthless for such a survey, firstly because they were destroyed after several years, and secondly because in most cases the diagnosis was unreliable. He had therefore, both in 1938 and in 1948, found it necessary to make his survey from private practice and pension records only. He had been scrupulously careful not to admit any patients twice from different sources, and, as he had shown, the number of blind pensioners had been pruned from 181 to 50 by the exercise of the same care. In regard to percentages, he admitted that they were of doubtful value, but he insisted that his staff who undertook the work should show the most scrupulous accuracy as they worked. In regard to the fact that the blindness rate in Queensland from pension records was only half that of Tasmania, Dr. Hamilton again emphasized the value of such comparative figures and congratulated the Queensland oculists present on their State's fine record. In reply to Dr. Lowe, Dr. Hamilton said that his (Dr. Hamilton's) remark about myopia and sight-saving schools had been misunderstood. What Dr. Hamilton had said was that sight-saving schools *plus* vitamin *D* therapy seemed to help. He wished to enlarge on this point, as the children under his care in Tasmania were ordered a quart of milk a day and, with this, vitamin *D* and calcium therapy. He further insisted again that every patient with diabetic retinitis in addition to complete dietetic and insulin therapy, should have the diet supplemented with vitamin *P*. He was glad that Dr. Redmond supported that view and he thanked Professor Ida Mann and Dr. Adelaide Gault for their suggestions, and particularly the former for her remark that Tasmanians must have some unique thiamin absorption to prevent them from being affected by tobacco amblyopia. In regard to an international classification of blindness, he assured Dr. Redmond that this was being completed and would be presented in London in July by the International Association for the Prevention of Blindness and that the Ophthalmological Society of Australia was supporting the classification to be submitted by the National Association for the Prevention of Blindness in New York to that body. Professor Ida Mann was the commissary of the Ophthalmological Society of Australia. In regard to Dr. Lockhart Gibson's suggestion that myopia should be classified according to its response or otherwise to calcium therapy, Dr. Hamilton thought that Dr. Gibson would be doing an invaluable service to ophthalmology in Australia if he would crystallize his ideas and produce a classification of myopia for the Ophthalmological Society of Australia. Dr. Darcy Williams's condemnation of the present Commonwealth blindness certification forms was mild and long overdue. All blindness had to be certified on invalid pension forms, and although the National Health and Medical Research Council had been asked in 1937 to rectify the defect, nothing had been done. Dr. Hamilton would warmly support any move that the Congress might make in that direction. In conclusion, Dr. Hamilton thanked the president of the Section for his encouraging remarks and suggested to members that if they wished to put ophthalmology in Australia on an international level, they would have to be prepared to find considerable funds for ophthalmological research and post-graduate work and for at least two chairs in ophthalmology in Australia. The ideals of the Ophthalmological Society should be publicized by its members in an endeavour to achieve the laudable ambition for a better ophthalmological service for the Commonwealth.

Exophthalmos.

Exophthalmic Ophthalmoplegia or Malignant Exophthalmos.

DR. P. B. ENGLISH (Brisbane) read a paper entitled "Exophthalmic Ophthalmoplegia or Malignant Exophthalmos". He said the condition was characterized by œdema of the lids and orbital tissues, limitation of ocular movement and generally proptosis of one or both eyes. It was not usually associated with thyreotoxicosis. Minor degrees of the condition were fairly common; but when it was gross and unilateral, ophthalmologists used to make a diagnosis of inflammatory pseudo-tumour of the orbit. After a short historical statement Dr. English discussed the signs and symptoms. He said that exophthalmos usually appeared first on one side and then in the other eye after a variable period, often about three months. Frequently periods of comparative stability alternated with periods of rapid deterioration. Œdema of the lids and chemosis usually occurred, and ophthalmoplegia developed. The patient complained of diplopia, increased sensitivity to light, watering of the eyes and sometimes a dull boring pain through the eyeball. Imperfect closure of the lids led to severe complications if untreated. Papillœdema and retinal hæmorrhages might be present. The proptosis could not be reduced by pressure on the eyeballs and did not disappear at death or under anæsthesia. The chief differences between ophthalmoplegic exophthalmos and thyreotoxic exophthalmos were in the sex and age incidence, in the presence or absence of hyperthyreoid symptoms, in the effects of iodine administration and thyreoidectomy (deleterious in the ophthalmoplegic type), in the degree of exophthalmos (greater in the ophthalmoplegic type), and in the basal metabolic rate (high in the thyreotoxic type). Dr. English then discussed the division of malignant exophthalmos by Dr. Ida Mann into three types: (i) thyroxine deficiency with excess thyreotropic hormone arising simultaneously; (ii) excess thyroxine followed by thyreoid failure or by thyreoidectomy; (iii) excess thyroxine and excess thyreotropic hormone. Dr. English also described experimental work that had been done on the nature of exophthalmos, and said that in the ætiology of the condition a number of factors were involved. The pituitary gland secreted thyreotropic hormone, which stimulated the thyreoid to secrete thyroxine, which in turn controlled to some extent the secretion of thyreotropic hormone. In certain cases of glandular imbalance that control was defective and excessive amounts of thyreotropic hormone were secreted. The thyreoid secretions might not be sufficient to curb the pituitary gland, and that state of affairs sometimes existed in exophthalmic ophthalmoplegia. In that type of case thyreoidectomy might be disastrous, and it was necessary to resist strongly any suggestions of thyreoidectomy unless the indications were certain. The prognosis was serious for affected eyes, and when conservative treatment failed orbital decompression might be necessary. Every effort had to be made to effect lid closure, so as to give complete cover to the cornea and to prevent desiccation and ulceration. Tarsorrhaphy was the best method. Œdema of the orbital contents frequently caused the tarsorrhaphy to give way, so that it had to be repeated. The use of oily drops or the wearing of a goggle might lessen desiccation of the cornea. With regard to general treatment, reduced fluid intake, sedation, rest, the administration of thyreoid extract and perhaps X-ray therapy to the pituitary should be persisted in unless corneal ulceration became too pronounced. Mercurial diuretics had been recommended when the eye was particularly œdematous and painful. If conservative treatment was unsuccessful, orbital decompression might be required. Dr. English then gave an account of a case of malignant exophthalmos in his practice, and concluded his paper by stating three important points in diagnosis: (i) The peculiar resistance felt on attempts to push the globe back into the socket. (ii) Œdema of the lids in the opposite eye before exophthalmos had developed on that side. (iii) The age and sex of the patient (age, the late forties; sex, male or female).

Thyreotropic Exophthalmos.

PROFESSOR IDA MANN (Perth) discussed thyreotropic exophthalmos, and presented details of 19 cases and mentioned 18 previously reported. The cases were divided into three groups. In Group I there was evidence of primary deficiency of thyroxine, with excess secretion of thyreotropic hormone of the pituitary. There was no antecedent history suggestive of thyreotoxicosis, the basal metabolic rate was low, there was no loss of weight, sweating or tremor, and the signs were those of pituitary overaction only. In Group II there was a history of thyreotoxicosis followed by thyreoidectomy or spontaneous atrophy of the thyreoid, in turn followed by signs of excess secretion of thyreotropic hormone. Sometimes there was a history of an emotional shock other than the thyreoidectomy as the precipitating cause of the proptosis. In Group III the onset of the illness was marked by the simultaneous appearance of symptoms and signs of excess thyroxine and excess thyreotropic hormone. The patients were usually very ill. Group III presented the greatest difficulty in treatment, since the thyreotoxic state might demand thyreoidectomy; but that was contraindicated by the presence of severe proptosis, which might be made worse by that operation. In Group I treatment with thyreoid extract until the basal metabolic rate was raised to +20% or even +35% was successful. Tarsorrhaphy might be necessary in the early stages. In Group II the treatment depended on the stage of subsiding thyreotoxicosis in which the patient was first examined, but in practically every case administration of thyreoid extract was sooner or later necessary. Tarsorrhaphy might be necessary, and sedatives and rest were often helpful. In Group III thyreoid extract could not be administered, and thyreoidectomy was generally contraindicated, though if the exciting cause was no longer active, it might give good results. Thiouracil should be tried only with great care. Rest, sedation and trial administration of testosterone or stilbœstrol should be employed, and the application of X rays to the pituitary should be considered. Tarsorrhaphy was almost always necessary. Dr. Mann said that in no case of the present series was an eye lost from exposure after treatment had been begun, and Naffziger's operation was never necessary. Some temporary impairment of sight might occur. The course of the illness was slow—as much as three or four years. As the illness was psychosomatic in nature, it would be shortened if the patient could gain insight into his condition. That was usually easy, as the cause was always recent and not deeply repressed. Most patients became well adjusted to any residual proptosis and limitation of ocular movement. Dr. Mann, stating her conclusions, said that the signs of excess thyroxine included loss of weight, a rapid pulse rate, a raised basal metabolic rate, soft moist skin, and lid retraction and lag; those of excess pituitary thyreotropic hormone included orbital, lid and conjunctival œdema and infiltration, and thence proptosis, ophthalmoplegia, fundus changes and loss of visual acuity. Deficiency of thyroxine produced a gain in weight, a low basal metabolic rate, thick coarse skin and a slow pulse rate. Those signs and symptoms should be evaluated in the diagnosis and treatment of proptosis associated with endocrine imbalance.

Discussion.

DR. J. BRUCE HAMILTON (Hobart) congratulated Professor Mann on her researches into exophthalmos and the related hormones. He said that two years earlier when he was president of the Tasmanian Branch of the British Medical Association, his Council had done its utmost to persuade the National Health and Medical Research Council to undertake a three-year survey of endemic goitre in Tasmania, but unfortunately there was no money for such a worthwhile investigation. Instead the Commonwealth Government sent Dr. F. W. Clements, Director of Nutrition, to Tasmania to investigate the nutritional side of the goitre problem; but that investigation was inadequate. At the same time the British Medical Association was asked to set up a Goitre Advisory Committee. This they did, but Dr. Hamilton had never heard that the committee

had been consulted by the Commonwealth or State Governments. Thus a wide field of clinical material was still awaiting investigation, and perhaps now that the National Health and Medical Research Council's vote had been increased to £80,000 per annum some further move would be made to carry out the work. Despite the fact that Tasmania was such a goitrous country, it would be remembered that in 1949 in Brisbane at the meeting of the Royal Australasian College of Surgeons, when he (Dr. Hamilton) had spoken on orbital tumours, he had shown a slide of the eye complications of thyreotoxicosis gleaned from 23,879 eye examinations; Dr. Hamilton proposed to show that slide again at the present meeting. Those complications existed in 50 cases—an incidence of 0·2%. Of those 50 patients, only 15 had bilateral exophthalmos, thus the incidence of bilateral exophthalmos in Tasmania was reduced to an incredibly low figure. Dr. Hamilton added that there were a further six cases of unilateral exophthalmos; not one of those patients suffering from either bilateral or unilateral exophthalmos had any gross degree of proptosis, nor did he remember one whose condition had progressed despite thyreoidectomy. He deduced from those figures that while the thyroxine hormone was a constantly active factor, the thyreotropic hormone of the pituitary was little, if any, stimulated in southern Tasmania.

Dr. Hamilton went on to say that those present would remember that when that keen Scottish observer, Dr. H. M. Traquair, was in Australia in 1935 for the one hundred and third annual meeting of the British Medical Association, he had suggested that diseases varied with their geographical distribution. It certainly appeared that exophthalmos did so, and they were grateful to Professor Mann for drawing their attention to the double hormone stimulation of the orbital content in thyreotoxicosis. Her pictures showed clinical features never observed in Tasmania, although they were seen with great frequency in America as well. That southern Tasmania should escape was both interesting and fortunate, and Dr. Hamilton again stressed the fact that that feature alone warranted adequate scientific investigation. It was the prerogative of that section of the Congress to pass a resolution, and Dr. Hamilton suggested that they request the Federal Council of the British Medical Association in Australia to approach the Commonwealth Government again and ask that it undertake adequate goitre research in Australia.

DR. J. B. CURTIS (Melbourne) said that in unilateral ophthalmoplegia with proptosis it was extremely important not to overlook intracranial conditions which might produce it. He would not discuss orbital tumours, which were of obvious importance. However, in addition to the well-known but rare clinical pictures of arterio-venous aneurysms of the cavernous sinus and thrombosis of the cavernous sinus, there were other intracranial conditions to be considered. The first was intracranial aneurysm. Aneurysms of the internal carotid artery in its cavernous sinus course or more distally, when it was subarachnoid, might produce paresis of the ocular nerves with or without proptosis. The onset was generally sudden, but might be spread over several days, and large aneurysms, slowly increasing in size, might take years to develop. Calcification or bony erosion found by plain skull radiography and cerebral angiography assisted in the diagnosis. A careful examination of the sensory and motor functions of the trigeminal nerve should always be carried out. The interesting condition of ophthalmoplegic migraine might be included in that group, as the available evidence indicated that an intracranial aneurysm was the cause of such recurrent attacks of ophthalmoplegia.

Dr. Curtis then referred to the second intracranial condition, meningioma. He said that meningiomata of the region of the cavernous sinus or sphenoidal wing, especially if growing *en plaque*, might have ophthalmoplegia and proptosis as their only presenting symptoms. The third intracranial condition was cerebral glioma. Occasionally proptosis, usually unilateral, was observed with gliomata. The mechanism of the production of glioma was obscure, but it was probably concerned with interference with venous drainage caused by high intracranial pressure. If it occurred in a silent area of the brain and in the absence of focal neurological signs, the diagnosis would depend on the general symptoms and signs of intracranial space-occupying lesions and on the results of cerebral angiography.

DR. JAMES FLYNN (Sydney) asked if examination of sections of eye muscle in thyreotropic exophthalmos always revealed the same picture as that described by J. H. Mulvany.

DR. SELWYN NELSON (Sydney) said that in most of the cases seen in Sydney low basal metabolic rates were present. In the difficult group with an elevated basal metabolic rate it was possible to achieve success with a combination of thiouracil and thyreoid therapy. It was felt that at a certain stage of exophthalmos the alarming condition of exophthalmic ophthalmoplegia supervened. This was possibly a stage of œdema supervening on the previous increase in orbital contents. Dr. Nelson asked for information on the actual mechanism of the proptosis.

Dr. English, in reply to Dr. Selwyn Nelson, said that Pochin and Rundle had examined *post mortem* the orbital contents of patients suffering from thyreotoxicosis, some with exophthalmos and some without. The increase in fat was similar irrespective of the presence or absence of exophthalmos. Dr. English also pointed out that Pochin had carefully investigated ocular movements, and had found that sometimes there was limitation of movement in severe degrees of simple exophthalmos similar in nature to, but less in degree than, that found in exophthalmic ophthalmoplegia. Pochin had formulated the theory that owing to the increase in the orbital contents and to the fat's being pushed forward into the lids, a stage was reached in which the orbital circulation was interfered with, and that caused the sudden onset of œdema of the lids and conjunctiva. Dr. English, in conclusion, said that in some cases it was possible that simple exophthalmos merged into exophthalmic ophthalmoplegia.

Recurrent Pterygium.

DR. K. B. REDMOND (Orange, New South Wales) discussed recurrent pterygium, on the basis of a series of 217 cases of pterygium dealt with by operation, with seven recurrences, over a period of approximately two years. He said that three questions required to be answered: (i) Why did pterygia recur? (ii) What could be done to prevent recurrence? (iii) What was the best method of treatment for recurrent pterygium? Discussing the first question, Dr. Redmond said that recurrence was slightly more common in males than in females. Naturally, most recurrences were found during the period of the greatest number of operations, though there was a possible preponderance in the decade forty-one to fifty years. With regard to occupation, it appeared that working in the open air was not such an important factor in the occurrence of pterygium as might have been thought; but it did predispose the subject to recurrence. The patients in the series had come mainly from western New South Wales, and the environment was divided into the western slopes and the western plains. It was found that the people living in the western plains had a greater tendency to pterygium and also to its recurrence than the people living on the western slopes. When pterygia were divided into vascular and avascular types, activity or vascularity was seen to be a most important factor in recurrence. When size was considered, and pterygia were classified as large, medium and small, it was found that large pterygia had the greatest tendency to recur. Recurrences were commonest from pterygia causing a medium degree of astigmatism, which were generally the most active; those causing a high degree of astigmatism were commonly found in elderly people and had become fibrous and non-vascular. Multiplicity of pterygia did not affect the incidence of recurrence. The presence of other ocular abnormality was found to have no significance. Dr. Redmond then referred to the part played by operation. He described the operative procedure used in the 217 cases, and said that an inefficient operation might be a

predisposing factor to recurrence. An efficient operation left an adequate "bare area", and pre-operative and post-operative care of the patient was designed to lessen vascularity of the affected area. During the post-operative period, if possible, the patient should avoid outdoor work in an environment such as the western plains, with hot summer temperatures and low rainfall. Dr. Redmond mentioned operative suggestions made by other ophthalmologists with the object of preventing recurrence of pterygium. He finally discussed the operative treatment of recurrence. He said that if there was little scar tissue and the recurrent pterygium consisted of a few vascular strands, it was due either to an inefficient operation leaving an insufficient bare area adjacent to the cornea, or to operation upon a vascular pterygium. Such a recurrence could be adequately dealt with by a transplant operation, an adequate bare area being left. If all the vascular area was difficult to remove from the cornea, then it should be lightly touched with the thermocautery. If, on the other hand, the recurrence was thick and highly vascular, with nodules and bands of fibrotic tissue, excision of scar tissue with the provision of a barrier greater than the bare area would be needed. Such a barrier could be provided by mucous membrane. However, care was required in the making of such a barrier; to ensure that it was not unsightly it had to be thin, and even so its pink colour might not fade for a few months. Dr. Redmond, in conclusion, said that the recurrence of a pterygium after operation was not completely avoidable even in the best hands; but it could be minimized by an understanding of the predisposing factors, and when it did arise it could be adequately treated.

DR. T. BOYD LAW (Lismore, New South Wales) said that he had been looking forward to hearing about the pterygium which developed in a climate different from the northern climate where he practised. There they were much closer to the equator, the climate was mostly hot and moist, and there were few hot, dry winds. Moreover, the population for the most part worked in the open. Dr. Law went on to say that an analysis of the last 135 cases of pterygium up to December, 1949, showed the proportion of vascular to non-vascular pterygia to be 100 to 35. Whereas the recurrence rate of the non-vascular type was always practically nil, the recurrence rate of the vascular type was more than double that quoted in Dr. Redmond's series. No treatment of which Dr. Law knew could improve the condition in the latter group before operation, and operation could be performed only when the balance between the actual necessity for operation and the likelihood of improvement was satisfactory. Dr. Law said that when such pterygia recurred—and by that he meant either a regrowth of vessels on the cornea or persistence of the red appearance of the eye—the second condition was often much worse than the original condition. The fleshy, red pterygium occurring in his practice was comparable with that seen in New Guinea and the Middle East during the war, and any attempt to treat it by the McReynolds operation was doomed to failure. Many modifications of McReynolds's operation had been used in the past fifteen years. They would include the leaving of a piece of bare sclera medial to the cornea, the swinging down of healthy conjunctiva from above and so on; but each attempt in Dr. Law's hands had had its quota of recurrences. The D'Ombrain technique was now used exclusively, and while the results had been greatly improved, there were still recurrences. Referring to that departure from the McReynolds technique, Dr. Law said that he did not subscribe to the theory that the bending of the vessels away from the cornea had anything to do with the case; if recurrence was going to take place, the vesels grew straight across from the bend in the pterygium.

Dealing with the recurrent pterygium itself, Dr. Law said that he could think of no procedure, including the technique of McGavic described in *Archives of Ophthalmology* for December, 1949, which would give even a 50% recovery rate. He had found that grafting of buccal mucous membrane was highly successful. In the last two years he had dealt with six cases of recurrence which had been present for varying periods of time, the patients having come from different parts of the country; the results had been good, both functionally and cosmetically. His technique was much more extensive than that described by Dr. Redmond, and was used only in cases in which extensive scarring, impaired mobility and sometimes even diplopia were present. It was found that the graft was firmly grown on after about four or five days, when the sutures could be removed. Although the eye looked red and frankly ugly for a month or two, the graft gradually settled down and assumed the normal colour of the rest of the eyeball; it discouraged any attempt at regrowth on the part of the pterygium. Dr. Law said that any attempt on his part to treat recurrent pterygium or even an ordinary pterygium by including in the procedure the cautery, silver nitrate or carbolic acid, had invariably made the condition much worse. Dr. Law finally mentioned the use of radiation therapy in pterygium. He said that he believed there was a place for the use of β irradiation, and if it gave good results without the production of visual defects over a prolonged period, he thought it would prove a most valuable acquisition to the armament of the ophthalmic surgeon.

DR. A. G. S. COOPER (Brisbane) spoke on the radiation therapy of recurrent pterygium. He said that the problem had to be approached by the application of radiotherapeutic principles. It had to be realized that any form of radiation therapy would have its maximum effect on cells undergoing mitosis, and that dictated the necessity to apply any treatment decided on in the stage of repair—within the first seven to ten days. Treatment might take the form of β-ray therapy by means of radon or radium plates; alternatively low-voltage X-ray therapy or even α-ray application might be employed. Dr. Cooper said that the advantages of a β-ray applicator were that the effective depth dose was no more than two millimetres, but as the applicators were made in a flat form, their coverage was not usually ideal. If that form of treatment was selected (and it was used in the distant sub-centres of the Queensland Radium Institute where X-ray therapy was not available), it was essential to choose a radium plate of known even distribution. That should be checked by autoradiographic methods, the plate being applied to a radiographic film for a few seconds. It was even better to select a radon plate, the distribution of which was always uniform. When X-ray therapy was available, it was preferable to use contact X-ray therapy because of the rapidly declining depth dose in tissues. The use of α-ray therapy—namely, the application of a radon ring, which was commonly applied in the treatment of epithelioma of the conjunctiva—appeared to be a rather drastic procedure for the treatment of a non-malignant condition.

Referring to radiation dosage, Dr. Cooper said that it was common practice to apply a β-ray applicator to give a half unit skin dose in one application, or better still, a quarter unit skin dose repeated twice at three-day intervals; thus a fractionated dosage was delivered. With contact X-ray therapy the dosage usually given in his practice had been 1600*r* on the surface fractionated over four to six exposures in a period of two to three weeks. If contact X-ray therapy was not available and recourse was had to the use of low-voltage X-ray therapy with its greater focal skin distance and increased penetration, full fractionation of dosage should be employed, and it was desirable that the beam should be directed obliquely to the globe, any irradiation of the lens thus being avoided. Dr. Cooper said that the surface doses he had mentioned would be barely sufficient in a small field to produce full erythema, and the dose received by the lens would be reduced by absorption. It was known that at least a full erythema dose was required to produce a radiation cataract, and he therefore considered that the treatment he had advised was safe from undesirable complications. It had been the experience that the further north or west one went in Queensland, the more frequent did pterygium become, and indeed some patients were referred for treatment after four or more recurrences. Ophthalmologists who had followed up those patients after treatment had reported that the results of radiation therapy were most gratifying.

DR. J. BRUCE HAMILTON (Hobart) said that he would like to voice a word of encouragement. As far as he was able to ascertain, in southern Tasmania only four patients had been operated on for pterygium in the last two years, and the recurrence rate was nil. Tasmania was virtually a pterygium-free country. Dr. Hamilton suggested to his northern colleagues that their patients with recurrent pterygium could safely be sent to Tasmania to live.

DR. A. G. BENNETT (Townsville, Queensland) said that it appeared that pterygium must occur 50 to 100 times more commonly in North Queensland, where he practised, than it did in Tasmania. In Townsville ophthalmologists tapped the north-west area of Queensland also, right from the Northern Territory and the Gulf of Carpentaria. As an example, he had just handed to Dr. N. M. Gutteridge a bottle containing 120 pterygia for the preparation of sections; he had excised them in the last eighteen months approximately. Dr. Bennett went on to say that he had excised a great number of pterygia in twenty-four years in the north. In the last ten years his recurrence rate had been low; but about five years prior to that period the rate was very high for a few years. In his opinion that observation had had nothing to do with the type of operation used, but it had to do with the type of active pterygium which was prevalent about that time; that, in turn, was undoubtedly associated with, or followed, a wave of a particularly active type of subacute to chronic conjunctivitis through the regions mentioned. The great north-west of Queensland had always been the home of conjunctivitis in all its forms. Dr. Bennett considered, from careful observation with a Zeiss loupe almost daily for twenty-four years, that the pterygium in its first stages was part of such conjunctivitis. Pseudopterygia of various origins were an exception to that statement. In cases of early or active pterygium, a velvety or infiltrated appearance of the palpebral conjunctiva, especially of the upper lid, was present. The pinguecula region of the conjunctiva was also often involved. Thus the pterygium started. The infiltrated pinguecula sometimes became so raised and granulomatous that it spread to the limbus and the cornea. Dr. Bennett thought that the flicking (blinking) of the lids over that raised spot helped to damage the adjacent corneal epithelium and to allow the lusty conjunctiva to outgrow or support the damaged corneal epithelium.

DR. W. LOCKHART GIBSON (Brisbane) said that the way to approach the operation was not to use the term "recurring type of pterygium"; the term "recurring" should rather be reserved for the surgeon. Dr. Gibson was of the opinion that, provided that no operation had previously been done, there should be 100% success. Thinking over about 1000 operations for pterygium done at his consulting rooms, he did not think there had been more than about five recurrences, and these could have been prevented by more attention to technique, and by not performing an operation on them while conjunctivitis and blepharitis were present. It was, of course, very difficult to postpone operation when the patient had come hundreds of miles for the purpose. Dr. Gibson removed the head from the cornea, and removed the pterygium tissue from under the conjunctiva. He then removed a triangle of conjunctiva from below the pterygium and brought the head down as a flap and sutured it firmly in the fornix. Great care had to be taken that all pterygium tissue was removed from the cornea and limbus.

DR. P. B. ENGLISH (Brisbane) said that in his experience during the war, the incidence of recurrence of pterygia operated on by various ophthalmologists appeared to be increasingly greater as one approached the tropic zones. With regard to recurrent pterygium, Dr. English said that in his hands the simple repetition of the transplant operation had proved ineffective. The operation he had found most satisfactory was that of the insertion of the mucous membrane graft. He did not find it necessary to insert so large a graft as some mentioned, but preferred his to be about three millimetres in diameter.

DR. E. COUPER BLACK (Adelaide) referred to the fact that the condition was more common in northern than in southern Australia. He asked members from Queensland if they had observed any racial predisposition to the condition; for example, was the incidence greater in northern Europeans than in Mediterranean peoples? There were many Italians in north Queensland. Dr. Black also wondered whether the condition was found in aborigines, half-castes or quarter-castes; if not, there was an argument for absorption of aborigines into the white population.

Dr. Redmond, in reply, said that one point that had emerged from the discussion was that geographical considerations were important. Dr. Boyd Law in northern New South Wales dealt mostly with large, fleshy pterygia, which were of the type particularly prone to recurrence. That also was the position in north Queensland. On the other hand, Dr. Hamilton had reported that pterygium was practically non-existent in Tasmania. Dr. Law had described the use of a large mucous membrane graft. Dr. Redmond said that he used such grafts when symblepharon was also present, and some type of conjunctival sac operation was needed in addition to the operation on the pterygium itself to alleviate diplopia and reconstitute the conjunctival sac. Dr. Redmond said that in his experience recurrences resulted from retraction and horizontal swinging of the tip of the pterygium and not from the margins. He agreed entirely with Dr. English that skin grafts were most unsuitable and should not be used. In reply to Dr. Black, Dr. Redmond said that he could recall one aboriginal with a vascular pterygium. He had been interested in Dr. Cooper's detailed explanation of contact X-ray and β-ray application and dosage, but still offered a plea for the utmost care in the use of irradiation. He thought that a penetration of two to three millimetres was sufficient to affect the ciliary body in the lens.

Harada's Disease.

DR. R. F. LOWE (Melbourne) discussed Harada's disease, or bilateral uveitis with poliosis, vitiligo, alopecia and dysacousia (the Vogt-Koyanagi syndrome), and presented two cases which had occurred simultaneously in Melbourne. He said that in 1926 Harada had described 12 cases of the syndrome. The characteristic feature was bilateral acute diffuse exudative chorioiditis, without clinical involvement of anterior segments of the eyes. Ocular examination revealed swollen disks and retinal œdema, which in eight of the 12 patients proceeded to retinal detachment. Later the detachments subsided and visual acuity improved, even returning to normal. Examination of the fundi subsequently revealed irregular depigmentation and pigment proliferation. Five of the patients had prodromal symptoms, such as headache and vomiting, and examination of the cerebro-spinal fluid revealed lymphocytosis. Eight of the patients developed poliosis and vitiligo, whilst four had transient deafness. In 1942 Carraquillo had reviewed the subject, giving the symptom complex the name "Vogt-Koyanagi syndrome" after its alleged discoverers. He laid emphasis upon severe anterior uveitis, retinal detachments being considered unusual, and upon alopecia, poliosis and vitiligo. Prodromal symptoms, impairment of hearing and cerebro-spinal fluid changes were also common. Dr. Lowe considered that the two syndromes could not profitably be differentiated. He said that a varied admixture of symptoms would be found from case to case. For his purposes the features of the full syndrome were the following: (i) prodromal symptoms of headache and general malaise; (ii) bilateral uveitis; (iii) bilateral retinal detachments resulting from bilateral uveitis, with subsequent reattachment; (iv) disturbance of hair and skin pigment; (v) spinal fluid lymphocytosis and increased protein content; (vi) dysacousia—overt clinical deafness, or only audiometric reduction; (vii) a sparse papulo-urticarial rash. The disease was rare. Dr. Lowe then described in detail the two cases that had occurred in his experience. He also mentioned the laboratory investigations that had been conducted, all of which had given essentially negative results, including animal inoculation experiments. He thought that in future diagnosis of the disease at its onset might increase the chance of success with similar tests. The only treatment of use was symptomatic, and treatment to diminish complications—atropine, rest *et cetera*. No specific treatment was known. Drugs tried included sulphamerazine, penicillin, aureomycin and

"Anthisan", but all were without beneficial effect. Retinal attachment and visual recovery occurred after approximately five months. In the reattached retinæ the appearances indicated considerable damage, but the final result could not be predicted for many months.

DR. T. L. MCLARTY (Adelaide) said that he believed Dr. Lowe's paper to be the first on Harada's disease given in Australia. It seemed obvious that in its most severe form the condition was as serious and apparently as intractable as sympathetic ophthalmia, and that the two conditions had a number of points in common. It was to be hoped that a study of the one condition would lead to a better understanding of the other. Dr. McLarty went on to say that cases of Harada's disease had been reported from a number of countries; most writers appeared to agree that the syndrome was rarely complete. He had found only one reference to a skin eruption such as that described in Dr. Lowe's paper. Dr. McLarty also mentioned the preference of writers for attributing the condition to a virus infection. He thought that there was no definite evidence to support that theory, although with earlier recognition of the condition and earlier appropriate investigation that evidence might be forthcoming. In conclusion, Dr. McLarty said that he had not seen or heard of the condition in South Australia, and he hoped that he would not be guilty of missing the diagnosis should he encounter any cases in the future.

DR. J. BRUCE HAMILTON (Hobart) congratulated Dr. Lowe on having correlated the two syndromes. He asked Dr. Lowe whether he thought that Harada's disease was a complete ocular picture of Boeck's sarcoidosis. Several similar features seemed to be exhibited in the two diseases. Dr. Hamilton finally asked Dr. Lowe whether he would try streptomycin treatment in his future cases and report the results.

Dr. Lowe, in reply, said that the syndrome had been clarified as briefly as possible in order that an aid to diagnosis in future cases should be provided. However, other diseases occasionally showed some of the features mentioned, particularly sympathetic ophthalmia. A helpful review had been given in Professor Frank Walsh's book. The association of prodromal symptoms with uveitis should suggest examination for other signs of the syndrome, as some of the minor changes could be overlooked. Dr. Lowe then said that the presence of the papulo-urticarial rash was reported in his paper for the first time. Although it was probably of no importance, its recognition could be useful. Each patient was treated for scabies before the behaviour of the rash was known. In reply to Dr. Hamilton, Dr. Lowe said that he had not considered the possibility of any relationship between Harada's disease and sarcoidosis. Widespread lesions occurred in each, but he did not think that the overlap was sufficient. Streptomycin had not been used. In future "Cortisone" should be tried; but unfortunately it could not yet be obtained in Melbourne.

Delayed Reformation of the Anterior Chamber.

DR. J. HART (Brisbane) read a paper on the failure of the anterior chamber to reform after cataract and glaucoma surgery, based on 11 cases, four from the practice of Dr. Allan Henry. The cataract extractions were extracapsular, and the glaucoma operations included trephining and modified Lagrange and iris inclusion procedures. Dr. Hart said that many surgeons regarded delayed reformation of the anterior chamber with equanimity unless it lasted longer than a week, and after glaucoma operations it was even looked upon as logical and desirable. His own belief was that it should be dealt with if it lasted for more than seventy-two hours. Three causes were given for the condition: chorioidal detachment, iridocyclitis and aqueous leak. He believed that in the majority of cases the cause was an aqueous leak. With regard to diagnosis, he had found the fluorescein method most unreliable, and had abandoned it. Complications were (i) cataract formation in cases of glaucoma, (ii) hypotony and *phthisis bulbi* and (iii) opaque, vascularized cornea with an irritable eye. The third was a great worry to the surgeon. Dr. Hart went on to say that he had tried five methods of treatment: firm bandaging, cauterizing the suture line, cauterizing the conjunctiva over the actual operation site, bringing down a flap, and bringing down a flap after cauterization. Firm bandaging was equivalent to waiting until the eye reformed itself; while that would occur without trouble in a number of cases, in a proportion complications would develop. Cauterization of the suture line might be effective, but was too uncertain. Cauterization of the operation site, if effective (in cases of glaucoma), was likely to prevent drainage altogether, making further operation necessary. The simplest and surest method was to bring down a flap from above, the original flap being left undisturbed; the conjunctiva was undermined above the suture line, brought down and attached near the limbus at the 4 o'clock and 8 o'clock positions. Local infiltration or light general anæsthesia might be used. The anterior chamber had usually reformed in twenty-four hours, the flap began to cut out in about three days and retracted to its original position, and in cases of glaucoma, there was usually a satisfactory bleb.

DR. A. V. HENRY (Brisbane) said that Dr. Hart's practical advice to bring down a conjunctival flap had several times solved the problem in cases causing him anxiety. He agreed with Dr. Hart that the anterior chamber should not remain flat for more than two or three days. He himself had not experienced that complication in cataract surgery over the past four years, but had had some half dozen cases in which it followed either trephining or sclerectomy for chronic glaucoma. Dr. Henry then referred to the ætiology usually put forward, mentioning first the so-called chorioidal detachment. He said that Dr. Hart had raised the interesting point whether the two conditions were not manifestations of the delayed closure of the wound—coincidental and not cause and effect. In that Dr. Hart seemed to have support from Sir Stewart Duke-Elder, who had made the following statement in his "Text-Book of Ophthalmology", Volume III:

> Post-operative choroidal detachments persisting or occurring some days after operation are due to delayed closure of the wound or the subsequent rupture of its loosely adherent margins, whether it be a corneal section or the conjunctival flap of an operation for glaucoma. In the latter operation they are more common than in the former . . .

Speaking of iridocyclitis, Dr. Henry said that it appeared to him that again it was conceivable that the iridocyclitis in some cases might easily be secondary to a leak in the wound causing delay in reformation of the anterior chamber, and irritation of the iris by compression between the lens and the endothelial surface of the cornea. With regard to aqueous leak, Dr. Henry said that from his own experience he had no doubt that it could be a factor which even careful examination and the use of fluorescein might not reveal, as indicated by rapid reformation of the anterior chamber after a conjunctival flap had been brought down. A pointer to that, he thought, was the association of a flat anterior chamber and a relatively poor drainage bleb.

With regard to diagnosis, Dr. Henry said that the fluorescein method had proved of use to him in one case. Therefore he thought it was worthy of a trial, although its failure to reveal a leak should not be regarded as conclusive evidence that one did not exist. Speaking of complications, Dr. Henry said that their seriousness was such that when the anterior chamber had remained flat for more than a week, he considered Dr. Hart's suggestion of bringing down a flap a sound one which could do no possible harm; it seemed in a surprisingly large number of cases to relieve the surgeon of his anxiety.

With regard to treatment, Dr. Henry said that he noticed that Dr. Hart had mentioned firm bandaging. He knew that that was employed by many people; but it was worthy of note that so eminent an authority as Sir John Parsons had made the following statement in his text-book "Diseases of the Eye":

> Delayed reformation of anterior chamber may be due to (i) jagged section, (ii) over-riding of the lower lip of the wound, (iii) to no apparent cause. It is

much less common after cataract extraction than after glaucoma, iridectomy or trephining. In these cases the bandage should be very lightly applied or discarded, dark protective goggles being worn in the daytime, and a light bandage with wire or cartella shield at night . . .

Dr. Henry finally said that since Dr. Hart had drawn his attention to the value of a flap in so many cases of delayed reformation of the anterior chamber, he was careful not to carry his initial conjunctival flap too high towards the upper fornix, so as to ensure that there would be an adequate conjunctival apron to bring down later should the need arise.

DR. JAMES FLYNN (Sydney) asked whether delayed reformation of the anterior chamber was less common after iridencleisis operations than after trephine operations or Lagrange operations.

(To be continued.)

Correspondence.

AN APPRECIATION.

SIR: Having returned to my office following a most interesting and delightful tour of the world, I would like to take this opportunity of saying to you and through the columns of your journal, how much Mrs. Routley and I enjoyed our visit to Australia, and how deeply we appreciated the abounding kindness and hospitality extended to us throughout our two weeks' stay in your wonderful country. It was a great joy to us not only to see the majesty of your domain, but to meet so many of your people.

I feel that the British Commonwealth Medical Conference held in Brisbane was an outstanding success, not only from the point of view of the papers presented, but for the opportunities afforded men from so many parts of the Commonwealth to come to know one another as colleagues and friends.

We shall always have very happy memories of our visit to Australia, and through the columns of your journal I would like to be privileged to say thank you to our Australian friends.

Yours, etc.,

T. C. ROUTLEY,
General Secretary, Canadian Medical Association.

135 St. Clair Avenue West,
Toronto 5, Ontario,
June 28, 1950.

Post-Graduate Work.

THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY.

Week-End Course in Diabetes.

THE Post-Graduate Committee in Medicine in the University of Sydney announces that a week-end course in diabetes will be held in the A2 lecture theatre, Royal Prince Alfred Hospital, Camperdown, on Saturday and Sunday, July 29 and 30, 1950. The programme is as follows.

Saturday, July 29.—2 p.m., "Ætiology and Experimental Diabetes", Dr. K. S. Harrison; 2.45 p.m., "Clinical Features: Glucose Tolerance Test", Dr. J. F. C. Cobley; 3.45 p.m., "The Management of the Diabetic Patient", Dr. L. Hewitt; 4.45 p.m., "Complications", Dr. R. L. Harris.

Sunday, July 30.—9.15 a.m., "Coma: Differential Diagnosis and Treatment", Dr. R. L. Harris; 10 a.m., ward round; 11.15 a.m., "Diabetes Under Special Conditions, for example, Child Diabetic, Diabetes in Pregnancy", Dr. J. Kempson Maddox; 12 noon, general discussion.

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED JULY 1, 1950.[1]

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.[2]	Australian Capital Territory.	Australia.[3]
Ankylostomiasis	*	1(1)	..	..	..	..	..	..	1
Anthrax	*	..	..	..	..	..	..	..	..
Beriberi	*	*	*	*	*	*	..	*	..
Bilharziasis	*	..	..	..	..	..	..	..	..
Cerebro-spinal Meningitis	3(2)	5(4)	2(1)	..	2(2)	1(1)	..	..	13
Cholera	..	..	..	..	..	..	..	..	..
Coastal Fever(*a*)	*	*	*	*	*	*	*	*	..
Dengue	*	*	*	*	*	*	..	*	..
Diarrhœa (Infantile)	..	..	1(1)	..	..	..	..	..	1
Diphtheria	16(4)	6(5)	6(5)	1(1)	2(1)	..	..	..	31
Dysentery (Amœbic)	*	..	..	..	..	..	..	..	..
Dysentery (Bacillary)	*	1	2(2)	..	1	..	..	..	4
Encephalitis Lethargica	..	..	..	..	..	..	..	..	..
Erysipelas	*	*	*	..	*	*	..	..	..
Filariasis	*	..	..	..	..	..	..	..	..
Helminthiasis	*	..	*	*	*	*	*	*	..
Hydatid	*	..	*	*	..	*	*	..	..
Influenza	*	*	*	..	*	*	..	*	..
Lead Poisoning	*	*	..	*	*	*	*	*	..
Leprosy	..	..	..	..	..	..	..	..	..
Malaria(*b*)	*	..	1(1)	..	..	..	..	..	1
Measles	*	*	*	35(11)	*	*	..	2	37
Plague	..	..	..	..	..	..	..	..	..
Poliomyelitis	7(5)	3(3)	1	11(7)	2(2)	*	*	*	24
Psittacosis	*	..	*	..	*	*	*	*	..
Puerperal Fever	..	..	..	..	..	..	..	..	..
Rubella(*c*)	*	*	*	*	*	*	1	1	1
Scarlet Fever	16(15)	21(12)	2(2)	14(11)	1(1)	5(1)	..	1	60
Smallpox	..	..	..	..	..	..	..	..	..
Tetanus	*	..	*	*	5(4)	*	*	*	5
Trachoma	*	..	*	*	*	*	*	*	..
Tuberculosis(*d*)	72(52)	10(2)	6(5)	5(2)	4(3)	7(5)	..	..	104
Typhoid Fever(*e*)	..	2(1)	..	..	..	..	..	..	2
Typhus (Endemic)(*f*)	1(1)	..	..	..	..	..	..	..	1
Undulant Fever	..	1(1)	1	..	..	..	..	..	2
Weil's Disease(*g*)	*	*	3	*	1	*	*	*	4
Whooping Cough	*	*	*	12(1)	*	*	..	..	12
Yellow Fever	..	..	..	..	..	..	..	..	..

[1] The form of this table is taken from the *Official Year Book of the Commonwealth of Australia*, Number 37, 1946–1947. Figures in parentheses are those for the metropolitan area.
[2] Figures not available.
[3] Figures incomplete owing to absence of returns from the Northern Territory.
* Not notifiable.
(*a*) Includes Mossman and Sarina fevers. (*b*) Mainly relapses among servicemen infected overseas. (*c*) Notifiable disease in Queensland in females aged over fourteen years. (*d*) Includes all forms. (*e*) Includes enteric fever, paratyphoid fevers and other Salmonella infections. (*f*) Includes scrub, murine and tick typhus. (*g*) Includes leptospiroses, Weil's and para-Weil's disease.

The fee for attendance will be £1 1s. Those wishing to enrol are requested to communicate immediately with the Course Secretary, the Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney, enclosing remittance. Telephones: BU 5238, BW 7483.

Week-End Course at Lismore.

The Post-Graduate Committee in Medicine in the University of Sydney announces that a week-end course will be held at Lismore in conjunction with the North Eastern Medical Association on Saturday and Sunday, August 5 and 6, 1950. The programme is as follows.

Saturday, August 5.—At Lismore Base Hospital: 10 a.m., clinical meeting. At Lismore Council Chambers: 2.15 p.m., "Management of Diabetes Mellitus", Dr. Kenneth T. Hughes; 4 p.m., "Skin Grafts and Skin Suturing", Dr. Kenneth W. Starr.

Sunday, August 6.—At Lismore Council Chambers: 9.30 a.m., "Some Aspects of the Treatment of Cardio-Vascular Disease", Dr. Kenneth T. Hughes; 11 a.m., "Gastrectomy and its Technique", Dr. Kenneth W. Starr; 2 p.m., general meeting of the North Eastern Medical Association.

The fee for attendance at the course will be £3 3s. (including £1 1s. for entertainment expenses). Those wishing to attend are requested to notify Dr. Nugent Brand, Honorary Secretary, North Eastern Medical Association, 39 Conway Street, Lismore, as soon as possible.

Overseas Lecturer: Professor Arthur W. Grace.

Professor Arthur W. Grace, M.D., Professor of Dermatology and Syphilology, Long Island College of Medicine, New York, United States of America, will give a lecture on "Virus Diseases of the Skin" on Tuesday, August 22, 1950. This lecture will begin at 8 p.m. in the Stawell Hall, 145 Macquarie Street, Sydney, and is open to all medical practitioners.

Courses for Part I, M.S., D.G.O., D.L.O., D.O.

Courses for Part I of the degree of Master of Surgery and diplomas in gynæcology and obstetrics, laryngology and otorhinology and ophthalmology of the University of Sydney will begin for periods of twelve weeks each on August 28, 1950. The fee for attendance at each course will be £26 5s. These fees are subject to alteration if small numbers apply. Those wishing to enrol are requested to communicate with the Course Secretary, the Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney, as soon as possible. Telephones: BU 5238, BW 7483.

Nominations and Elections.

THE undermentioned has applied for election as a member of the New South Wales Branch of the British Medical Association:

McLaughlin, Brian Luden Varden, provisional registration, 1950 (Univ. Sydney), Mater Misericordiæ Hospital, Waratah, New South Wales.

The undermentioned have applied for election as members of the South Australian Branch of the British Medical Association:

Simons, Sophie Lucie Chlotilde, M.D., 1927 (Baun.), 384 Main North Road, Enfield.

Slade, John Harman, M.B., B.S., 1946 (Univ. Adelaide), c.o. Bank of New South Wales, Berkeley Square, London.

The undermentioned has been elected a member of the South Australian Branch of the British Medical Association:

Russell, Albert William, M.B., B.S., 1949 (Univ. Adelaide), 19 Parker Street, Mile End.

Medical Appointments.

Dr. J. A. R. Miles has been appointed medical research fellow at the Institute of Medical and Veterinary Science, Adelaide.

Dr. P. S. Hetzel has been appointed surgical research officer at the Institute of Medical and Veterinary Science, Adelaide.

Dr. G. H. Burnell has been appointed honorary consulting surgeon at the Royal Adelaide Hospital, Adelaide.

Obituary.

ARTHUR LIPPMANN.

WE regret to announce the death of Dr. Arthur Lippmann, which occurred on July 5, 1950, at Melbourne.

Diary for the Month.

JULY 25.—New South Wales Branch, B.M.A.: Ethics Committee.
JULY 26.—Victorian Branch, B.M.A.: Council Meeting.
JULY 27.—New South Wales Branch, B.M.A.: Branch Meeting.
JULY 27.—South Australian Branch, B.M.A.: Clinical Meeting.
JULY 28.—Queensland Branch, B.M.A.: Council Meeting.
AUG. 1.—New South Wales Branch, B.M.A.: Organization and Science Committee.
AUG. 2.—Victorian Branch, B.M.A.: Branch Meeting.
AUG. 2.—Western Australian Branch, B.M.A.: Council Meeting.
AUG. 3.—South Australian Branch, B.M.A.: Council Meeting.
AUG. 4.—Queensland Branch, B.M.A.: Branch Meeting.
AUG. 8.—New South Wales Branch, B.M.A.: Executive and Finance Committee.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney)—all contract practice appointments in New South Wales.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federal Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

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